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PROPOSAL FOR

HAYES PARK

BOSTON, MASSACHUSETTS

BOSTON REDEVELOPMENT AUTHORITY

BY PAUL C. K. LU AND ASSOCIATES, BOSTON, MA.
LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS

SEELYE STEVENSON VALUE & KNECHT, BOSTON, MA.
CONSULTING ENGINEERS

HALEY & ALDRICH, INC., CAMBRIDGE, MA.
GEOTECHNICAL ENGINEERS

BRYANT ASSOCIATES, INC., BOSTON, MA.
SURVEY CONSULTANTS

PAUL C. K. LU AND ASSOCIATES

134 Beach Street Boston, Massachusetts 02111 (617) 484-4022

December 14, 1988

Mr. Paul Reavis
Assistant Director
Engineering and Design Services
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: James Hayes Park, Request For Proposal

Dear Mr. Reavis,

The award winning minority owned firm of Paul C. K. Lu and Associates is pleased to submit this proposal for the James Hayes Park Project.

Paul C. K. Lu and Associates is a multi-disciplinary design firm practicing landscape architecture, urban design and planning. Our firm has received 15 national and international awards for a variety of assignments conducted for clients largely in the public sector.

For the City of Boston specifically, we have established a successful working history with both the Parks and Recreation Department and the Public Facilities Department on a number of urban park and streetscape projects. We have enclosed respective references for your review.

Serving as subconsultants on the project team we are joined by Seelye, Stevenson, Value & Knecht, consulting engineers of Boston, MA to perform site, electrical mechanical and resident engineering services. Also, Haley & Aldrich the well known firm from Cambridge, MA will be lending their expertise in geotechnical matters. Finally, site survey services will be performed by Bryant Associates of Boston, MA.

In our proposal we have endeavored to delineate our qualifications as well as pertinent project considerations. Toward further evaluation of our firm we respectfully request your consideration of the following:

- We have a wealth of experience on similar park projects for a variety of public sector clients (See Project Lists and Client References enclosed). As a result, we are familiar with agency requirements and reviews.

- Our current project workload is such that we are prepared to produce all project efforts and products in an efficient and timely manner (See Qualification Statement - Scheduling).

- We are a minority-owned business enterprise which enjoys Boston Residency at 134 Beach St.

We believe that the team we have assembled for this project represents the very best in landscape architecture and engineering.

We are confident in our ability to carry this project from preliminary design to construction implementation, and wish to take this opportunity to thank you for your continued interest in our firm.

Sincerely,

Christian L. Brown, Associate
For
Paul C. K. Lu and Associates

CLB/rw
Enclosures

P38-88A

JAMES HAYES PARK INTERVIEW

Presentation to

BOSTON REDEVELOPMENT AUTHORITY
FRIENDS OF JAMES HAYES PARK
ASSOCIATION

By

o PAUL C. K. LU & ASSOCIATES
Landscape Architects, Urban Designers, Planners

Paul C. K. Lu, ASLA, AIA, APA, Principal-in-Charge
Christian L. Brown, ASLA, Project Manager
John Lyons, ASLA

o SEELYE STEVENSON VALUE AND KNECHT
Consulting Engineers

Paul Razgha, P.E., Principal-in-Charge
Tom Ravorsa, P.E.

o HALEY AND ALDRICH
Geotechnical Engineers

Martin C. Murphy, P.E. , Principal-in-Charge

o BRYANT ASSOCIATES, INC.
Survey Consultants

DATE: January 13, 1989

TIME: 1:30 PM

PLACE: Boston Redevelopment Authority
Charlestown Navy Yard Building 34

PAUL C. K. LU AND ASSOCIATES

STATEMENT OF QUALIFICATIONS

The firm of Paul C. K. Lu and Associates possesses a long and successful history in the design and renovation of urban park projects. It is the wealth of experience we have gained from these past efforts that make us particularly well qualified to undertake this assignment.

Design Quality

At Paul C. K. Lu and Associates we have won 15 national and international awards for past planning and design efforts for clients largely in the public sector.

More importantly however, we understand that the success of a design may best be evaluated by how the facility endures or ages after implementation. In anticipation of this most important project consideration, among the many questions we ask ourselves during the design process, the following are always included:

- Who is going to use the facility?
- What practical limitations should be placed on prospective usages considering the site's capabilities/limitations?
- Is vandalism a consideration?
- What are the concerns of management and maintenance personnel?

Scheduling

We do not require urging to perform our duties. We undertake our work with great initiative and enthusiasm and produce all project products within a strict budget and time frame.

Meeting schedules is a matter of effective management and planning and possessing adequate resources to meet production needs. With specific regard to scheduling we offer the following approach:

- Close coordination and communication with the client to insure continuous methodic progress and to eliminate unnecessary revision.
- Staggering production vs. design on various firm projects to continuously engage, but not overload personnel.
- Standardized method production of project products.
- Use of largely senior/skilled personnel on the project team with a pool of back up part-time personnel.

Presentation

A hallmark of the services provided by Paul C. K. Lu and Associates is presentation. To convey clearly our achievements in this area we offer the following:

- We have a national award to our credit for Public Participation efforts specifically.
- Our expertise has been utilized by other design firms to handle particularly difficult public hearing issues.
- We believe in a team design approach which makes paramount use of user input.
- We have formulated innovative public participation workshops which have proven key to the success of a number of issue oriented project efforts.

Cost Estimating

Since we have a long history of Open Space Improvement Projects, we likewise possess a wealth of knowledge in the costs associated with such work, as well as the variables that affect those costs. Some of these considerations are as follows:

- We produce comprehensive and detailed construction documents so the contractor knows his costs.
- We constantly monitor the bidding climate.
- Our involvement in Park Renovation Projects is ongoing therefore our costs are always current.
- We make use of in house and consulting cost estimators including contractors as a final check.
- We employ bidding which offers the greatest budgetary flexibility while accommodating owner's priorities.

Recent Project Examples

Raleigh C.B.D. Improvements
Client: City of Raleigh, NC
Construction Budget/Estimate: $731,600.00
Low Bid: $712,800.00

Fitchburg Upper Common Rehabilitation
Client: City of Fitchburg, MA
Construction Budget/Estimate: $143,000.00
Low Bid: $138,000.00

Concord Playing Field Improvement Program, Phase II
Client: Town of Concord, MA
Construction Budget/Estimate: $240,000.00
Low Bid: $239,800.00

Raymond Street Totlot
Client: City of Cambridge, MA
Construction Budget/Estimate: $100,000.00
Low Bid: $ 94,618.00

Construction Drawings and Specifications

Our primary objective in the production of the Contract Documents is to communicate clearly to the contractor in both specific detail and comprehensive generality all requirements for the successful construction of the project. When done properly this should achieve three primary objectives:

- Insure that all improvements implemented are in accurate keeping with the conceptual design intent.
- Encourage the lowest possible bids by the elimination of guesswork on the part of the contractor.
- Insure against cost overruns due to field change orders.

These are the objectives we strive for and continually attain in the production of Working Drawings and Specifications. In addition, we recently won a regional award from the Construction Specification Institute for CSI format specification writing.

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SECTION I

FIRM BROCHURE

INTRODUCTION TO THE FIRM

The award winning, minority owned firm of Paul C. K. Lu and Associates practices Landscape Architecture, Planning, Urban Design, and Environmental Analysis.

The office is based on a core of multidisciplinary design and planning professionals, each contributing unique skills to collective project efforts of varying size and complexity.

Our primary goal is to create the highest quailty planning and design products.

All the team members have extensive experience within large well-known firms. However, we have found that as a small group we can focus on a quality product and maintain a low overhead. We take personal pride in and responsibility for all our creative efforts.

Our guiding philosophy is to create outstanding work utilizing a 'process oriented method'. This approach to planning, design and implementation includes the following steps:

- Analysis of the project's opportunities and constraints, the natural environment and the political framework.

- Interpretation and clarification of the user's needs to develop a workable program and timeframe.

- Development of several specific design schemes to explore the project's potential and examine relative costs and phasing.

- Efficient production of contract documents by our staff and consultants for design implementation and owner occupancy.

The process oriented framework allows flexibility for both client and potential user involvement while facilitating an orderly flow through the planning phases.

The extensive professional background of Paul C. K. Lu and Associates and the collective experience of the individual team members makes the firm uniquely qualified to undertake the planning, design, implementation and management of a wide variety of projects.

PROFESSIONAL AWARDS

*** National Honor Award**
for Urban Environmental Design Western Canal Beautification, Lowell, Mass., by U.S. Department of Housing and Urban Development, Washington, D.C.

*** First Prize Winner**
The International Medium Density Low-Rise Density Housing Design Competition, Tokyo, Japan. Sponsored by Japan Architects, Inc., Tokyo, Japan.

*** National Honor Award**
for Urban Design - Ecumenical Plaza, Lowell, Mass., by U.S. Department Housing and Urban Development, Washington, D.C.

*** National Merit Award**
for West Broadway Housing Renewal Project, for Boston Housing Authority, South Boston, MA. Sponsored by Progressive Architecture, Stamford, Connecticut.

*** National Honorable Mention**
for West Palm Beach Waterfront Design Competition, West Palm Beach, Florida, sponsored by the City of West Palm Beach, FL.

*** Merit Award**
Vietnam Veterans Memorial Design Competition, Washington, D.C. Selected as one of 44 merit awards from 1,451 submissions. Sponsored by Vietnam Veterans Memorial Fund, Inc., Washington, D.C.

*** Fourth Prize Winner**
The National Urban Design and Landscape Architecture Competition for "St. Louis Gateway Mall Design." Sponsored by Downtown St. Louis, Missouri.

*** Finalist**
Pioneer Courthouse Square Competition, Portland, Oregon. Sponsored by the City of Portland, Oregon.

*** National Honor Award**
for Charles River Park Synagogue, Boston, Mass., by U.S. Department of Housing and Urban Development, Washington, D.C.

*** Honor Award**
for Landscape Architectural Design -Transportation Facilities Design, Hay Street Transit Mall, Fayetteville, North Carolina. Sponsored by North Carolina Chapter of the American Society of Landscape Architects, Raleigh, N.C.

PROFESSIONAL AWARDS (cont.)

* National Merit Award

for Park and Recreation Planning/Design - Western Canal Park, Lowell, Mass., by American Society of Landscape Architects, Washington, D.C.

* First Prize Winner

Corliss Landing Redevelopment Project Competition for Marathon Development Corporation, Providence, Rhode Island.

* National Award

for Lowell Downtown Development under the National Recognition Program for Community Development Partnerships, Lowell, Mass., by U.S. Department of Housing and Urban Development, Washington, D.C.

* Honor Award

for Landscape Architectural Design -Historic Preservation and Restoration, Columbia Riverfront Park, Cloumbia, South Carolina. Sponsored by the North Carolina Chapter of American Society of Landscape Architects, Raleigh, N.C.

* National Honorable Mention

for the State of Maryland Vietnam Veterans Memorial Open Design Competition. Sponsored by the Governor of the State of Maryland and Maryland Vietnam Veterans Memorial Commission, Baltimore, Maryland.

STATEMENT OF QUALIFICATIONS

The firm of Paul C. K. Lu and Associates has a long history of success in the design and renovation of urban park projects. It is the wealth of experience we have gained from past efforts that makes us particularly well qualified to undertake this assignment.

Design Quality

Paul C. K. Lu and Associates has won 15 national and international awards for past planning and design efforts for clients largely in the public sector.

We understand that the success of a design is best evaluated by how the facility endures and ages after implementation. Because of this understanding, the following questions are uppermost in our minds during the design process:

- Who is going to use the facility?
- What practical limitations should be placed on possible uses considering the site's capabilities and limitations? o Is vandalism a consideration?
- What are the concerns of management and maintenance personnel?

Scheduling

We do not require urging to perform our duties. We undertake our work with great initiative and enthusiasm to produce all project products within a strict budget and time frame.

Meeting schedules is a matter of effective management and planning, as well as possession of adequate resources to meet production needs. We offer the following approach to scheduling:

- Close coordination and communication with the client to insure continuous methodic progress and to eliminate unnecessary revision.
- Staggering production vs. design on various firm projects to continuously engage, but not to overload, personnel.
- Standardized method production of project materials.
- Use of largely senior/skilled personnel on the project team with a pool of back up part-time personnel.

Presentation

A hallmark of the services provided by Paul C. K. Lu and Associates is presentation. To convey clearly our achievements in this area we offer the following:

- o We have won a national award specifically for Public Participation efforts. o Our expertise has been called upon by other design firms to handle particularly difficult public hearing issues.
- o We believe in a team design approach which welcomes and relies on user input.
- o We have formulated innovative public participation workshops which have proven key to the success of a number of issue-oriented project efforts.

Cost Estimating

Because we have a long history of open space improvement projects, we possess a wealth of knowledge in the costs associated with such work, as well as the variables that affect those costs. Some of these considerations are as follows:

- o We produce comprehensive and detailed construction documents so the contractor knows his costs.
- o We constantly monitor the bidding climate.
- o Our involvement in Streetscape Projects is ongoing therefore our costs are always current.
- o We make use of in house and consulting cost estimators, including contractors, as a final check.
- o We employ bidding which offers the greatest budgetary flexibility while accomodating the owner's priorities.

Recent Project Examples:

Improvements to Ramsey Park
Client: Parks & Recreation Dept., Boston, Ma
Construction Budget/Estimate: $480,000.00
Low Bid:$466,665.00

Raleigh C.B.D. Improvements
Client: City of Raleigh, NC
Construction Budget/Estimate: $731,600.00
Low Bid: $712,800.00

Fitchburg Upper Common Rehabilitation
Client: City of Fitchburg, MA
Construction Budget/Estimate: $143,000.00
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Concord Playing Field Improvement Program, Phase II
Client: Town of Concord, MA
Construction Budget/Estimate: $240,000.00
Low Bid: $239,800.00

Raymond Street Totlot
Client: City of Cambridge, MA
Construction Budget/Estimate: $100,000.00
Low Bid: $ 94,618.00

Construction Drawings and Specifications

Our primary objective in the production of contract documents is to communicate clearly to the contractor in both specific detail and comprehensive generality all of the requirements for the successful construction of the project. When done, properly this should achieve three primary objectives:

- Insure that all improvements implemented are in keeping with the design's conceptual intent.
- Encourage the lowest possible bids by the elimination of guesswork on the part of the contractor.
- Insure against cost overruns due to field change orders.

These are the objectives we strive for and continually attain in the production of working drawings and specifications. In addition, we recently won a regional award from the Construction Specification Institute for CSI format specification writing.

LA SALLE UNIVERSITY LIBRARY

PHILADELPHIA, PENNSYLVANIA

The successful resolution of problems presented by an irregular site topography, ambitious parking requirements, and an existing utility corridor is a fundamental component of the design for this landscape architecture and site planning project. Moreover, to enhance the identity of the new library as an elegant gateway to this urban campus, extensive site improvements include: a formal entry plaza, new site plantings, expansive lawn area and a major pedestrian spine linking facilities campus-wide. For Shepley, Bulfinch, Richardson, and Abbott - Architects, Boston, Massachusetts.

PAUL C.K. LU & ASSOCIATES

ECUMENICAL PLAZA

LOWELL, MASSACHUSETTS

Paul C.K. Lu & Associates provided urban design and landscape architecture services for a plaza constructed as a bridge spanning an existing canal. The open space links two diverse ethnic neighborhoods, with historic churches overlooking the new public amenity. Flowering Cherry Trees and Red Maples provide colorful seasonal changes and serve as a focal point for religious and social activity. For the City of Lowell, Massachusetts.

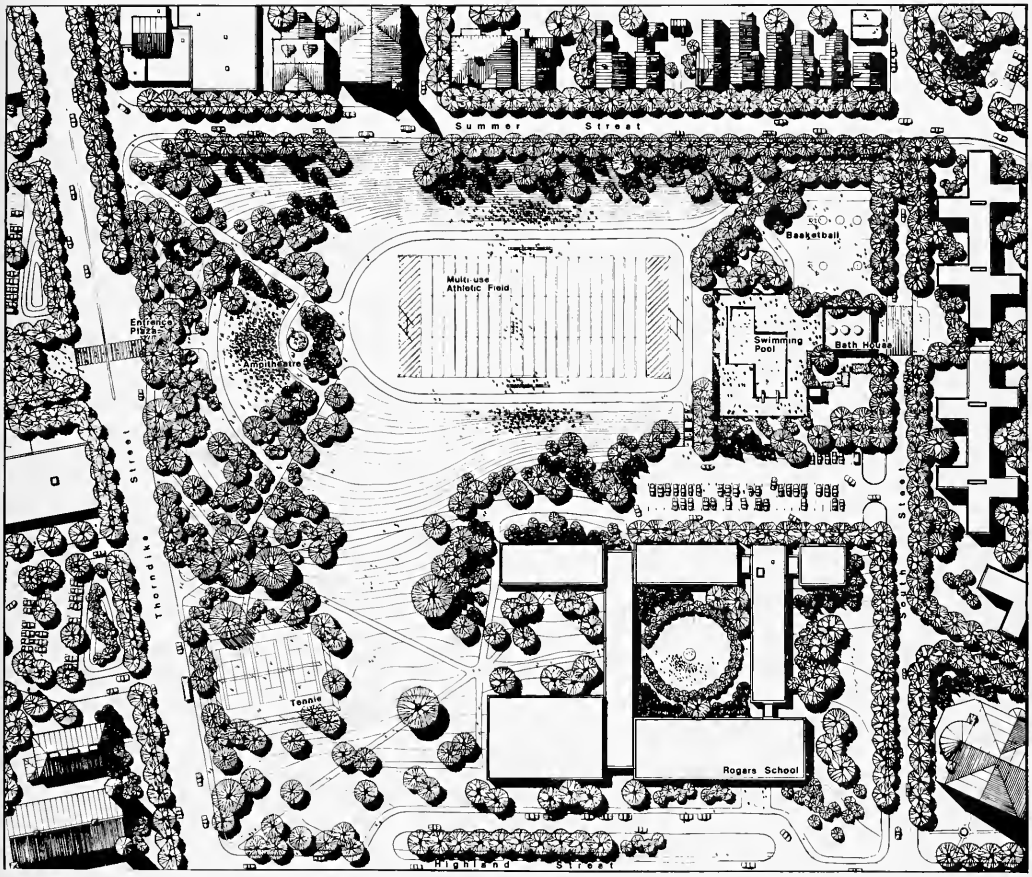
PAUL C.K. LU & ASSOCIATES

CHARLES RIVER PARK SYNAGOGUE

BOSTON, MASSACHUSETTS

This project involved landscape design for an established orthodox Jewish congregation whose shul was lost in the urban renewal of Boston's West End. Reestablishment of the synagogue included lush plantings of evergreens and vines to emphasize the intricate surface texture and sculptural quality of the building. Lively interplay of interior spaces with exterior courtyard spaces, achieved through skillful layering of plant materials, has served to enhance the worship and contemplative experience of the congregation. Consultant to CBT, Inc. - Architects.

PAUL C.K. LU & ASSOCIATES



SOUTH COMMON

LOWELL, MASSACHUSETTS

This master planning and landscape architecture project has culminated in the construction of a new 12 acre park which acts as a visual and recreational centerpiece for the neighborhood it serves. The many park improvements include: plazas, an amphitheatre, a swimming pool, tennis courts, various playfields, a jogging track, and new site plantings. For the City of Lowell, Massachusetts.

PAUL C.K. LU & ASSOCIATES

WINCHESTER CENTER URBAN DESIGN

WINCHESTER, MASSACHUSETTS

By enhancing underutilized pedestrian linkages between public open space and the retail district, the overall character of this town center has been dramatically improved. New thematic street lighting, shade trees, as well as brick and granite pavers contribute to an overall pedestrian amenity package made possible by some $1.2 million of public investment. As a result, vigorous ongoing private sector re-investment ensures the continued economic vitality of this suburban community. For the Town of Winchester, Massachusetts.

PAUL C.K. LU & ASSOCIATES

FAYETTEVILLE TRANSIT MALL

FAYETTEVILLE, NORTH CAROLINA

Hay Street, a once run-down, automobile-dominated street in the the Central Business District, has been transformed into a generously people-oriented amenity zone. Improvements include: widened sidewalks, shade trees, lighting, seating, a new decorative fountain, information kiosks and historic displays. As an active "people place," the Transit Mall will encourage economic revitalization through the enhancement of the downtown's visual character and by the functional accommodation of diverse urban activites. Consultant to Parsons Brinkerhoff Quade & Douglas - Engineers. For the City of Fayetteville, NC.

PAUL C.K. LU & ASSOCIATES

PAUL C. K. LU, ASLA, AIA, APA

EDUCATION

Harvard University, Graduate School of Design,
Master of Landscape Architecture , 1967
Kansas State University, School of Architecture and Design,
Master of Architecture, 1962
Kansas State University, School of Architecture and Design,
Bachelor of Architecture, 1958
Chung-King University, College of Engineering (Taiwan, Formosa),
Bachelor of Science in Architectural Engineering, 1954
Massachusetts Institute of Technology, Department of Planning,
Urban Design & Visual Analysis Special Studies, 1966
University of Wisconsin - Extension, Department of Engineering,
Extension Courses, Land Reclamation & Land Planning Special Studies Certificate, 1973 & 1974
Boston University, Metropolitan College, Dept. of Urban Affairs,
Urban Planning & Transportation Special Studies, 1976, 1977

AFFILIATIONS

Member, American Institute of Architects; Member, American Society of Landscape Architects; Member, American Planning Association; Member, Society of College and University Planning; Member, American Hospital Association; Member, Institute of Urban Design; Member, Metropolitan Association of Urban Designers and Environmental Planners; Member, New England Solar Energy Association.

REGISTRATIONS

Registered Landscape Architect, Massachusetts, North Carolina, Rhode Island, Maryland, Kansas, Connecticut, Delaware, South Carolina; Registered Architect, Massachusetts, North Carolina, South Carolina; Certificate -National Council of Architectural; Registration Boards (NCARB); Certificate -National Council of Landscape Architecture Registration Boards (CLARB).

HONORS AND AWARDS

Winner of fifteen (15) National and International Planning and Design Awards (see separate sheet for Professional Awards)
Member Tau Sigma Delta, National Honor Society in Architecture and Allied Arts, Omecron Chapter
Member Delta Phi Delta, National Honor Fraternity of Fine Arts
Harvard University, three consecutive Scholastic Awards
Kansas State University, three consecutive Scholastic Awards
Chung-King University of College Engineering, three consecutive Scholastic Awards for Research of Tropical Architecture.

VISITING CRITIC AND LECTURER

Harvard University, Graduate School of Design and Continuing Education
University of Massachusetts, Boston Architectural Center
Kansas State University
University of Georgia
Tulane University
Louisiana State University
Radcliff College
Rhode Island School of Design
University of North Carolina
University of Virginia
University of Maryland

PROFESSIONAL EXPERIENCE

Paul C. K. Lu and Associates
Professor (part-time) University of Maryland
Professor, University of North Carolina
Visiting Professor, University of North Carolina at Charlotte
Adjunct Professor, Rhode Island School of Design
Sasaki Associates, Inc., Watertown, MA
Victor Gruen Associates, Architects and Planners, NY
Katz, Waisman, Weber, Struss, Architects and Engineers, NY
Joseph Bluemenkranz and Associates, Consulting Architects, NY
C. B. Mayers Associates, Architects and Engineers, NY
Shaughnessey, Bower and Grimaldi, Architects, Kansas City, Missouri
Dan Sanford & Sons, Architects, Kansas City, Missouri
Manual Morris Associates, Architects, Kansas City, Missouri

AREA OF RESPONSIBILITY

Principal owner of the firm with responsibility for administration, project planning and design.

CHRISTIAN L. BROWN, ASSOCIATE

EDUCATION

University of Massachusetts, Bachelor of Science
- Environmental Design/Landscape Architecture, 1978

AFFILIATIONS

American Society of Landscape Architects

PROFESSIONAL EXPERIENCE

Paul C. K. Lu and Associates, Belmont, Massachusetts
Walter Brain Associates, Concord, Massachusetts

AREAS OF RESPONSIBILITY

Mr. Brown has served as both Project Manager and Construction Documentation Specialist since he joined the firm in 1984. With his most recent promotion, he now serves as an Associate in charge of office management, promotion and project management.

Noteworthy projects whereby Mr. Brown has served as Project Manager are as follows :

- **Winchester Center Urban Design Phase I and II, Winchester, MA**
  For the City of Winchester, Massachusetts
- **Newton Village Study, Newton, MA**
  For the City of Newton, Massachusetts
- **Fitchburg Hi-Tech Center, Fitchburg, MA**
  For Fitchburg Economic Redevelopment Agency, Fitchburg, MA
- **Moore Square Area Improvements, Raleigh, North Carolina**
  For the City of Raleigh, North Carolina
- **West Broadway Public Housing Renewal Project, Boston, MA**
  For Boston Housing Authority, Boston, Massachusetts
- **Concord Playfields Improvement Program, Concord, MA**
  For the Department of Parks and Recreation, Concord, Massachusetts
- **University of Massachusetts Comprehensive Facilities Plan, Boston, MA**
  For Seelye, Stevenson, Value & Knecht, Engineers, Boston, MA
- **Lynn Heritage State Park Site Design, Lynn, MA**
  For the Department of Environmental Management, Boston, MA
- **LaSalle University Library**
  For Shepley, Bulfinch, Richardson and Abbott, Architects, Boston, MA
- **LoPresti Park, Boston, MA**
  For Public Facilities Department, Boston, Massachusetts
- **MBTA Park/Ride Improvements**
  For Massachusetts Bay Transit Authority, Boston, Massachusetts
- **Market Street Site Improvements, Lowell, MA**
  For the Department of Planning and Development, Lowell, Massachusetts
- **Cape Cod Rail Trail, Eastham -Wellfleet, Massachusetts**
  For the Massachusetts Department of Public Works and Environmental Management

CAROLYN C. COONEY

EDUCATION

University of Pennsylvania,
Master of Landscape Architecture, 1977

AFFILIATIONS

American Society of Landscape Architects

REGISTRATION

Registered Landscape Architect, Massachusetts

PROFESSIONAL EXPERIENCE

Paul C. K. Lu and Associates, Belmont, Massachusetts
Brown and Rowe, Boston, Massachusetts
Weir Associates, Boston, Massachusetts
William Pressley and Associates, Newton, Massachusetts
Roy Rydell Associates, Santa Cruz, California
Schnadelbach Braun Partnership, Philadelphia, Pennsylvania

PROJECT EXPERIENCE

- **Ramsey Park, Boston, MA**
  Landscape architect for site design and renovation of existing park and ballfield.
- **LaSalle University Library, Philadelphia, Pennsylvania**
  Project landscape architect for site planning and design of a main library complex.
- **Elliot Residence, Marblehead, MA**
  Landscape architect for site design for a waterfront residence.
- **Whittier School EOCD Mixed Family Housing, Dorchester, MA**
  Project landscape architect for site design of renovation of existing school to housing units. Work included schematic design to bid documentation.
- **St. Edward's Convent Congregate Housing, EOCD, Brockton, MA**
  Project landscape architect for renovation of convent to congregate housing for the elderly. Services included design of walkways, sitting areas, parking, site grading and planting.
- **Four Seasons Hotel/Park Plaza Redevelopment Area, Boston, MA**
  Project management and design for the design development and contract documentation phases for the redevelopment of Park Plaza.
- **La Chaminade Conference Center, Santa Cruz, California**
  Project management for design development and construction documentation phases. Project involved outside dining terraces, siting areas and fountains.
- **Tiverton Commons, Tiverton, Rhode Island**
  Project management of 15 acre small commercial development. Work included schematic site design for new buildings, parking, commons, pond and preservation of existing historic houses.

IVY K. H. NG

EDUCATION

University of New South Wales, Sydney, School of Architecture
Bachelor of Architecture (Honors), 1987

AFFILIATIONS

Royal Australian Institute of Architects

AWARDS

University of New South Wales, Associated Hardware Manufacturers Scholarship, 1988

PROFESSIONAL EXPERIENCE

Paul C. K. Lu and Associates, Belmont, Massachusetts
Fox and Associates, Architects/Planners, Sydney, Australia
KHP Architects, Melaka, Malaysia

PROJECT EXPERIENCE

o **Lynn Heritage State Park Site Design, Lynn, MA**
Landscape design and construction documentation. Site elements include pedestrian paths, plaza, fountain, park furniture, lawn and parking.

o **Ramsey Park, Boston, MA**
Landscape design and construction documentation for a ballfield, children's playground, tennis and basketball courts.

o **Belmont Shopping Center Parking, Belmont, MA**
Conceptual design for a parking lot to an existing shopping center.

o **Benco Shopping Center, Washington, D.C.**
Site study, analysis and presentation for site improvements to an existing shopping center.

o **Nut Island Site Improvements, Quincy, MA**
Report for a proposal to undertake site improvements for the Nut Island Treatment Facility for the Massachusetts Water Resources Authority.

o **Whitsunday Holiday Resort, Queensland, Australia**
Planning and architectural design for a holiday resort to include hotels, condominiums and shopping centers.

o **Parramatta Office Complex, Parramatta, New South Wales**
Design and construction documentation for a five-storey office complex in the central business district of Parramatta.

o **Melaka Sports Center, Malaysia**
Conceptual design and project management for a five-storey sports complex that includes a swimming pool, squash courts, a bowling alley and restaurants.

o **Supreme Office Complex, Melaka, Malaysia**
Conceptual design and schematics for a twenty-four storey office complex, with a sports facility on the top three floors of the complex.

ROBERTO C. GARCIA

EDUCATION

Texas A & M University,
Bachelor of Science in Landscape Architecture, 1984
Texas A & M University Foreign Studies Program, Florence, Italy, 1983

AFFILIATIONS

Associate Member of the American Society of Landscape Architects

REGISTRATIONS

Registered Landscape Architect, Texas

HONORS AND AWARDS

Norman Newton Scholar for 1988-89,
Harvard University Graduate School of Design
National ASLA Student Honor Award, 1984

PROFESSIONAL EXPERIENCE

Paul C. K. Lu and Associates, Belmont, Massachusetts
Carter and Burgess, Inc., Dallas, Texas

PROJECT EXPERIENCE

- **Central Transit Transfer Facility, Greenville, South Carolina**
  Project planner for a two level garage facility that includes rooftop and pedestrian level landscape improvements.
- **McBee and Washington Street Landscape Improvements, Greenville, South Carolina**
  Project planner for the coordination of street landscape improvements with concurrent street redesign by the engineering consultants.
- **University of Massachusetts Comprehensive Facilities Plan, Boston, MA**
  Project planner responsible for documenting and evaluating existing conditions on the campus to identify areas of concern and potential. Tasks included field survey, presentation graphics and report preparation.
- **Fort Bliss Installation Design Guide, West Texas**
  Team leader and project landscape architect for preparing comprehensive design guidelines for a one million acre military base. Tasks included visual analysis of developed and undeveloped land, documentation of existing conditions and formulation of design guidelines for new development and renovation.
- **Trinity Lakes Park Master Plan, Dallas, Texas**
  Team leader in preparing the master plan for this 3000 acre riverside park in downtown Dallas.

SECTION II

SUB CONSULTANTS

SEELYE STEVENSON VALUE & KNECHT

Seelye Stevenson Value & Knecht is a diversified consulting engineering and planning firm with a 70-year history of professional accomplishment. The firm was founded in 1912 by Elwyn E. Seelye, a structural engineer whose handbooks on this subject were used by generations of students. The firm expanded into civil and highway engineering during the 1930's, and added a mechanical and electrical engineering division in 1951. In 1972 SSV&K became one of the STV Engineers professional firms.

Seelye Stevenson Value & Knecht's professional staff has provided studies, planning, design and construction supervision on diverse projects for private and governmental clients throughout the northeastern states as well as in other domestic areas and overseas. The firm has been responsible for engineering of many highways, hundreds of bridges, and major rail and mass transit projects. The firm has also designed commercial, industrial, environmental, educational, military, research, recreational and health care facilities.

Personnel by Office Location

New York, NY	194	Stratford, CT	24
Rochester, NY	36	Plainview, NY	27
Boston, MA	34	Jersey City, NJ	10

Major Clients

AMTRAK
Aetna Life Insurance Co.
American Broadcasting Co.
Branford Sewer Authority
Chicago and Northwestern Transportation Co.
Children's Hospital of Buffalo
Columbia Broadcasting System
Connecticut DOT
Conrail
Downstate Medical Center
Eastern Airlines
FMC Corp
General Electric Co.
Georgia — Pacific Corp.
Grumman Aerospace
Hartford Gas Company
IBM Corp.
MBTA
MTA
Metropolitan Life Insurance
NASA
NAVFAC
NYCTA
New Jersey DOT
New York DOT
New York Telephone Co.
Pennsylvania DOT
Princeton University
Rochester Pure Waters District
Rutgers University
E. R. Squibb & Sons
Sperry Systems Management
Transworld Airlines
USAID
United Airlines
U.S. Army COE
U.S. DOE
U. S. Postal Service
Westinghouse Electric Corp.

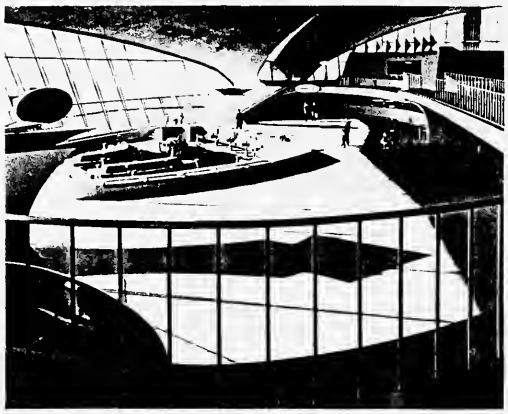
TRANSPORTATION

Airports

Design and construction supervision of parking apron, new taxiway and rehabilitated runway and terminal facilities for Rochester — Monroe County Airport, NY.

Design and construction supervision for taxiway, runway, apron and terminal improvements for Stewart Airport, Newburgh, NY.

Design and construction supervision for rehabilitating various Eastern Airline facilities of JFK International Airport, Jamaica, NY, including expansion apron and pavements, lighting, terminal modifications and electrical systems.



Highways

Design, specifications and construction inspection for the West Shore Expressway, a major six-lane, 8.5-mile urban roadway in Staten Island, NY.

'reliminary and final design for the reconstruction of the Merritt 'arkway/Connecticut Route 8 interchange in Trumbull, CT.

'ehabilitation plans for the Brooklyn-Queens Expressway, Kings 'ounty, NY, including a 4,800-foot viaduct and 14 street bridges.

'ridges

nspection, surveys and rehabilitation design for seven bridge tructures carrying the Belt Parkway over three waterways and our local streets in Brooklyn and Queens Counties, NY.

'onstruction inspection for the 2,055-foot-long Outer Loop Bridges Twin Spans) over the Genesee River, Rochester, NY.

nspection, rating and stress analysis and rehabilitation design for ne Roosevelt Avenue Bridge, Queens County, NY, carrying oth vehicular and rapid transit traffic over the Flushing River.

'ail

'esign and construction supervision for the West Side Storage ard for the Metropolitan Transportation Authority, New York, NY.

'reliminary and final design for reconstruction and redesign f Atlantic Terminal Building and improvement of commuter ail subway service, Brooklyn, NY.

Preliminary plans for alternate layouts and design for the expansion of the Coney Island rapid transit maintenance shops and yard, Brooklyn, NY.

Master planning and preliminary design of shop facilities and complete inventory of existing shop conditions and work flow for the Morris Park commuter rail shop and storage yard master plan, Queens, NY.

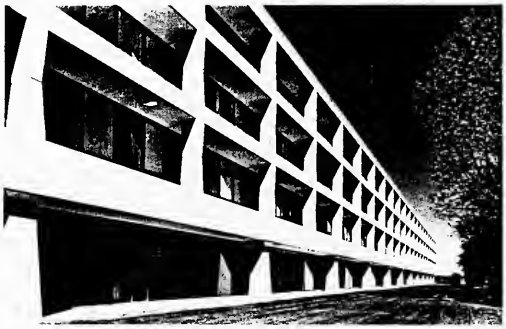
PROCESS/MANUFACTURING

Structural, electrical and mechanical system design for a Radioactive Isotope Facility, Squibb Pharmaceutical Company, New Brunswick, NJ.

Final design of three complete manufacturing plants for General Cable Corporation, Arkansas, Arizona and Virginia.

Industrial engineering services to increase productivity of 125,000-sq ft General Electric Company factory used for the production of electronic products.

Mechanical, electrical and structural design for two IBM plants in Minnesota and New York.



BUILDINGS

Mechanical and electrical engineering for improvements to Downstate Medical Center Teaching Hospital, Brooklyn, NY.

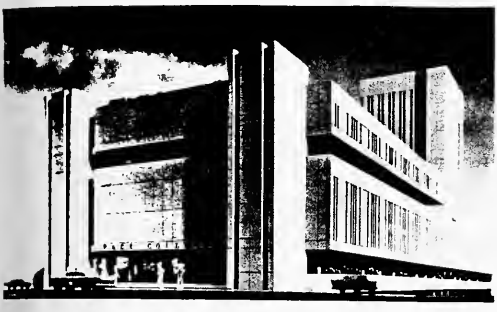
Mechanical, electrical and structural design of five college campus buildings for the State University of New York, Brockport, NY.

Structural, mechanical, plumbing and electrical engineering for the Rutgers University gymnasium, Camden, NJ, and the 6-1/2 level parking facility for the Rutgers campus in Newark, NJ.

Mechanical, electrical and structural design for the North Carolina Mutual Life Insurance Building office building, Durham, NC.

Structural design for a six-level parking garage and access facilities, Macy's Department Store, Rego Park, NY.

Structural design of the urban Pace College Campus Center, New York, NY



ADVANCED TECHNOLOGY

Complete A/E services for design and later modification of the 125 million cubic foot Vehicle Assembly Building, Kennedy Space Center, FL

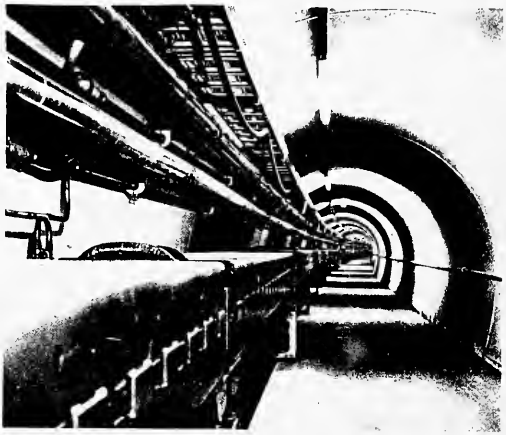
Design and construction supervision for the Shuttle Payload Integration Facility for processing classified payloads, Cape Canaveral, FL

Feasibility study of testing facility for aircraft pilot flight training simulators, Grumman Aerospace Corp., Great River, L.I., NY

Engineering and architectural support for Sperry Systems Management's Naval Integrated Storage Tracking and Retrieval System (NISTARS)

Engineering services, performed in joint venture, for a facility enclosing a new light source synchrotron for high-energy physics research, Brookhaven National Laboratory, Upton, NY.

Participated in design of the Fermi National Accelerator Laboratory, Batavia, IL, a high-energy physics lab for the Department of Energy.



ENERGY

Installation of three 120,000 PPH industrial boilers for Conrail at the Cos Cob generating facility in Connecticut.

Study analyzing various methods to upgrade and increase the capacity of an existing district heating system, Picatinny Arsenal, NJ.

Energy engineering analysis of 107 buildings totalling 3,480,000 sq ft at Fort Monmouth, NJ; Stratford Army Engine Plant, CT; and Natick Research and Development Laboratory, MA.

Waste characterization study and conceptual design of an energy recovery facility for the town of Branford, CT.

ENVIRONMENTAL

Study, design, plans, specifications and construction supervision for wastewater treatment facilities for the Branford Sewer Authority, CT.

Construction supervision and inspection for the Cross-Irondequoit Pump Station, NY.

Study, report and construction supervision for the North-South sanitary interceptor, Greece, NY.

Design of Fulton Arcade, an eight-block-long Brooklyn pedestrian mall and transitway, to relieve traffic congestion and noise and air pollution.

Managed in joint venture the Sewer Overflow Abatement Program in Rochester, NY, to reduce flooding and improve water quality.

FIRM HISTORY

Seelye Stevenson Value & Knecht (SSV&K) is a diversified consulting engineering and planning firm with a 70-year history of professional accomplishment.

The firm was founded in 1912 by Elwyn E. Seelye, a structural engineer whose handbooks on this subject were used by generations of students. The firm expanded into civil and highway engineering during the 1930's, and added a mechanical and electrical engineering division in 1951. In 1972, SSV&K became one of the STV Engineers Professional Firms. The firm of Slocum & Fuller joined SSV&K in 1974, further expanding the firm's mechanical and electrical engineering capabilities.

SSV&K's Boston Office has a dynamic multi-disciplined staff offering complete design services in architectural, structural, mechanical, electrical and civil fields as well as construction inspection and resident engineering services as required. SSV&K's reputation in Boston as a professional firm is confirmed by the many projects awarded to them by new and repeat clients.

SSV&K is a major subsidiary of STV Engineers, Inc., a leading international consulting, engineering, architectural, planning and construction management firm that is ranked among the 50 largest companies in "Engineering News Record's" annual ranking of the 500 top design firms in the country. STV Engineers is a group of multi-disciplined professional engineering firms employing over 1,100 professional and support staff throughout the United States and Overseas. Each of the STV firms operates independently in serving most of its clients; where appropriate, however, multi-company project teams are formed from the best qualified professionals in the entire STV Family.

Seelye Stevenson Value & Knecht's professional staff has provided studies, planning, design and construction supervision on diverse projects for private and governmental clients throughout the northeastern states as well as other domestic and foreign areas. Design responsibilities have included commercial, industrial, environmental, educational, housing, military research, recreational, health care and criminal justice facilities as well as many highways, local roadways, hundreds of bridges, airport runways and facilities and major rail and mass transit projects.

SSV&K has a record of consistently high standards of performance, and of reliability in fulfilling contracts within scheduled deadlines and budgetary constraints.

SSV&K's Boston's Office direct data link to the STV Engineers computer center enables it to perform complex, high-speed engineering studies, to explore design alternatives, to achieve accurate scheduling and monitoring, and to monitor cost control functions on a daily basis.

Backed by the fiscal strength and centralized administrative management of STV Engineers, its publicly-held corporate parent, SSV&k has the expertise, experience and resources required to serve a wide variety of clients.

PAUL I. RAZGHA, P.E.

EDUCATION

Bachelor of Science, Civil Engineering, Technological Institute of Brno, Czechoslovakia
Master of Science, Structural Engineering, Technological Institute of Brno, Czechoslovakia

PROFESSIONAL REGISTRATION

Professional Engineer, Massachusetts
Licensed Court Appointed Arbitrator, Structural Engineering, Czechoslovakia (1961-1968)
Licensed Construction Supervisor

GENERAL EXPERTISE

Vice President and Director of Engineering with an extensive and varied background as administrator, project manager and designer on multi-discliplined projects including transportation facilities, vehicle maintenance facilities, housing, apartment complexes, office buildings, industrial buildings, laboratories, recreational facilities, pumping stations, new and rehabilitated fixed and movable bridges, viaducts, highways, access roads, bridge approaches, haudraulics, dams, dikes, flood control projects and site development. He has directed and supervisd all phases of design including study, design review, plan development, specifications and estimates. A specialist in project control and schedule and budget adherence, he is also extremely knowledgeable of applicable codes and ordinances. Review Engineer of record for recent projects including the World Trade Center for MASSPORT, various City of Boston bridges and General Lawrence bridge, Medford for MDC.

PROJECT EXPERIENCE

o **BUILDINGS**
- World Trade Center Rehabilitation Design Review, Boston
- MBTA Service & Inspection Facility, Boston
- Renovations to Edson Building, Logan International Airport
- Town Bank & Trust Company Addition and alteration, Brookline
- Operations Building, Winter Harbor, ME
- Watertown Realty Trust Office Building, Watertown
- Computer Room Addition, Hills Department Stores, Canton
- Amelia Earhardt General Aviation Terminal, Logan International Airport
- North Terminal and Pier "D" Renovations, Logan International Airport
- Miscellaneous Mechanical, Electrical and Structural Engineering Services, Portsmouth Naval Shipyard, NH
- Alter UEPH, Dormitory Rehabilitation, Pease AFB, NH
- Perimeter Wall & Guard Tower, MCI Concord
- Energy Conservation Implementation, Logan International Airport

PAUL I. RAZGHA, P.E. (continued)

- Professional Services & Advice on MDC Structures and Properties
- Energy Study and Technical Audit, MCI Norfolk
- Energy Study and Technical Audit, MCI Bridgewater
- MBTA Automatic Train Washing & Reclamation System, Somerville
- MBTA Fueling & Sanding Station, Somerville
- Antenna Support, Spectradyne, Inc.
- Fire Protection, Mystic Pier #1, Charlestown
- Electrical & Plumbing Design, MCI Cedar Junction
- Analog Devices Building, Fast Track, Wilmington, Frendolph Corporation
- Rehabilitation of MBTA Boston Engine Terminal, Somerville
- Renovation to Bus Garage, WRTA, Worcester
- MBTA Bowdoin-Charles Street Station Connector Study
- Family Housing, Haverhill
- Repairs to Control House, Irish Dam, Grafton
- Renovation to Wastewater Treatment Facility, MCI Bridgewater
- MBTA Red Line Yards and Shops Facility Needs Study
- MBTA Park-Ride and Station Improvements Project
- Existing Condition Survey, Mechanical & Electrical, MCI Plymouth
- New Electrical Substation, North Station
- Existing Condition Report, Three Boston Public Schools (Thompson, Lee & Emerson)
- Family Housing, Westover AFB, Chicopee
- Feasibility Study of Archdale and Gallivan Recreation Centers
- Comprehensive Facilities Plan for University of Massachusetts
- Building Alterations, State Pier, New Bedford
- Marina Building Rehabilitation, Fairhaven
- New England Telephone & Telegraph Office Addition, Concord
- Food Process, Refridgeration and Office Facility, Servend, Inc.
- Communications Building Additions, Winter Harbor, ME
- Technical Energy Audits at MCI Cedar Junction and MCI Bridgewater
- Renovations to Housing/security, MDC Cedar Junction
- Rehabilitation of MBTA Bartlett Street Bus Maintenance/Administrative Facility (five building complex)
- J. F. McElwain Office Building, Nashua, NH
- Structural Rehabilitation, Porter Square Dodge, Cambridge
- Structural Rehabilitation, Norwood Dodge, Norwood
- Factory Rehabilitation, John Solomon, Somerville
- 8 Story Office Building, Technical Institute, Prefabrication Plant and Testing Laboratory and various industrial buildings required for deep coal mining facility operation, all in Czechoslovakia

PAUL I. RAZGHA, P.E. (continued)

- **PARKING FACILITIES: MULTI-LEVEL, DECKS AND AT-GRADE**
  - MBTA Park-Ride and Station Improvement Program, Phase III
    Multi-level parking garages: Bunker Hill Community College, and Malden Center
    Parking Decks: Norwood Depot, Wellesley Square, and Woodland Station
    At-grade Parking: Suffolk Downs, Watertown Yard, Attleboro Station, Mansfield Station and Saugus Station
  - MBTA Lynn Central Square Multi-level Parking Garage
  - Multi-level Parking Garage, Parcel No. 3, Pittsfield
  - Merrimac Street Parking Garage - Part B, Haverhill
  - Sanford Street Parking Deck, Attleboro
  - Ross Parking Deck, Quincy
  - Commuter Rail Parking At-grade Parking Facility, Attleboro
  - Parking Areas for the Department of Fisheries and Wildlife, Route 8A, Windsor/Savoy
  - Watertown condominiums and Underground Parking Garage Complex
  - Comfort Station with At-grade Parking Facilities, Sandwich
  - Swimming Pool and Bathhouse Complex including At-grade Parking Facilities in Lowell, Lawrence, Brockton, Fall River, and Metheun
  - At-grade Parking Layout Redesign, Eastern Airlines Reservation Center, Logan International Airport
  - North Terminal Renovations and Parking Area Design, Logan International Airport
  - Sales Creek Pumping Station including At-grade Parking Facilities, Revere
  - Ceasar's Monticello, Framingham; Site Development including At-grade Parking Facilities
  - Contact Station with At-grade Parking Facilities, Sandwich
  - Pine Street At-grade Parking Facility, Attleboro

- **BULKHEADS and PIERS**
  - Commonwealth Pier Rehabilitation, Boston
  - Bulkhead Repair, Hull
  - North Terminal Bulkhead Extension, New Bedford
  - Sea Wall Reconstruction, Gloucester
  - Waterfront Structure Studies (Bulkheads), Wellfleet
  - Chelsea Street Bridge - Fender System inspection and preparation of damage report done by ship TAURUS
  - Chelsea Street Bridge - New fender system design
  - Mystic Pier No. 1, Charlestown - Fire Protection and Ships Water Distribution System

- **DAMS, DIKES AND APPURTENANT STRUCTURES**
  - Charles River Dam, Structural Repairs, Boston
  - Tide Gate, 3-barrel Culvert and Dike Structure, Hydraulic and Structural Design, Wellfleet
  - Hydrologic and Hydraulic and Structural Evaluation of Two Dams on Tussock Brook, Duxbury

PAUL I. RAZGHA, P.E. (Continued)

- Abbot Pond Dam Improvements, Andover
- Replacement of Sluice Gates, Lake Ripple Dam, Grafton
- Alum Run Dam, Hydraulic and Structural Design, Clarington, Ohio
- Lake Louisa Dam and Dikes, Hydraulic and Structural Design, Milford
- Multi Purpose Dam, Site 1 Erosion Control Study and Design of Sedimentation Pools, Goshen, NH
- Repairs to Control House, Irish Dam, Grafton
- Goodwin Dam Hydraulic Study Review, Hartford, CT
- Inspection of Structural Components of Approximately 100 Non-Federal owned Dams in Massachusetts, Vermont, and New Hampshire

o **FLOOD CONTROL AND DRAINAGE REGULATIONS**
- Sales Creek Watershed Hydraulic Study, Revere
- Ararat and Holden Brook, Worcester
- Dresser Brook, Newton
- Sales Creek Channel Improvements, Revere
- Sales Creek 60 Inch conduit Design
- Sales Creek Pipe Jacking, Revere
- Hydraulic Study of the Herring River Watershed, Wellfleet
- Hydraulic Study of the Opossum Creek Watershed including Backwater Calculations (Tributary to the Ohio river), Clarington, Ohio
- Water Pollution Control Systems, MASSPORT
- Malden River Improvements including Dredging and Siltation Control, Malden
- In Cechoslovakia, 3x60,000 GPM Flood Control Pumping Station

o **WATER WORK RELATED PROJECTS**
- Water Main, Scusset Beach
- Water Supply Pumping Station, Sandwich
- Sales Creek Pumping Station (3x45,000 GPM capacity), Revere
- In Czechoslovakia
  - 1.5 MG capacity Underground Water Storage Reservoir (cast-in-place R.C.)
  - 2.6 MG capacity (twin) Underground Water Storage Reservoir (cast-in-place R.C.)
  - 0.2 MG capacity Postensioned R.C. Standpipe
  - 21,600 GPM Water Supply Pumping Station

o **BRIDGES**
- Overview Engineering Services, Various Bridges (City of Boston)
- Review Engineer for General Lawrence Bridge over Mystic River, Medford
- Rehabilitation of John J. Beades Draw Bridge, Boston
- "L" Street Draw Bridge Rehabilitation, Boston
- Congress Street Draw Bridge Rehabilitation, Boston

PAUL I. RAZGHA, P.E. (continued)

- Charles River Dam Draw Bridge Rehabilitation, Boston
- Chelsea Street Draw Bridge Rehabilitation, Boston
- Northern Avenue Swing Bridge Reconstruction, Boston
- Charlestown Swing Span Bridge Rehabilitation, Boston
- Summer Street Draw Bridge Rehabilitation, Boston
- Harvard Bridge Rehabilitation, Boston/Cambridge
- First Street Draw Bridge Rehabilitation, Boston
- William Reid Overpass (6 span Viaduct), Boston
- Winter Street over Sudbury River
- Central Street over Sudbury River
- Fountain Road over MDC Reservoir
- Salem End Road over MDC Reservoir
- Bridge Replacement, Pond Street over MBTA & B&M Railroad, Billerica
- Bridge Replacement, Plain Street over MBTA and CONRAI, Braintree
- Bridge Replacement, Union Street over MBTA and CONRAIL, Gardner
- Newburyport Bridge over the Merrimack River (including pier rehabilitation)
- Rehabilitation of Route 6 over New Bedford Harbor, Fairhaven/New Bedford, Preliminary Design
- Replacement of Washington Street Bridge over MBTA, Lynn
- Massachusetts Avenue Bridge, Repairs to Floor Beams and Hangers
- Bridge Inspection and Rating, Contract #23464 (MDPW)
- Professional Services and Advice on MDC Structures and Properties including Rehabilitation of Woods Memorial Bridge
- Rehabilitation of New Street Bridge, Fall River (Shell Oil)
- Chelsea Street Bridge Grid Deck Replacement
- Rehabilitation Study/Report Charles River Dam Drawbridge and Craigie Bridge
- Chelsea Street Bridge Pier & Fender System Rehabilitation
- Timber Header System Rehabilitation, Charlestown High Bridge
- Dean Street Track & Bridge Rehabilitation (4 Bridges)(EOTC)
- Bridge Inspection & Rating, Contract #24880 (MDPW
- Bridge Raising, B&M Railroad, Palmer and Monson
- Charlestown Bridge Replacement
- Temporary Improvements Fort Point Channel Bridge (MBTA)
- Replacement of Centre Street Bridge over Trout Brook, City of Brockton
- Route 140 Bridge Widening, Mansfield
- Bridge Inspection & Rating, Contract #88134 (MDPW)
- Replacement of South Street Bridge, City of Waltham
- Morrissey Boulevard over Mt. Vernon Street
- Jamaicaway Overpass
- Winter Street Footbridge over Sudbury River
- Memorial Drive over CONRAIL
- Pawtucket Street over B&M Railroad
- Morton Street over CONRAIL

PAUL I. RAZGHA, P.E. (continued)

- Anawan Street over CONRAIL
- Alewife Brook over B&M Railroad
- Alewife Brook over Fitchbury Division Railroad
- Winthrop Street over B&M Railroad
- Lowell Street over B&M Railroad
- Lowell Street over MBTA
- Columbia Road over MBTA, CONRAIL and Old Colony Avenue
- Hammond Street over MBTA
- Bridge Inspections, Ratings and Comprehensive Studies for MDC Bridges
- Retaining Wall along Housatonic River

o HIGHWAYS
- Route 8A Reconstruction, Windsor/Savoy, MA (MDPW)
- Bird Island Flats Access Road, Logan International Airport
- Merrimack Street Reconstruction, Haverhill
- Route 116, Soute Hadley to Amherst, MA
- Park Way and Haverhill Place, Haverhill
- Roadway Network for Scusset beach Recreational Facilities, Sandwich
- Access Road, Lake Louisa Dam and Dikes, Milford
- Approach Roadway Widening and Bridge Replacement, Union Street over MBTA and B&M Railroad, Gardner
- Approach Roadway Widening and Bridge Replacement, Pond Street over MBTA & B&M Railroad, Billerica
- Approach Roadway Widening and Bridge Replacement, Plain Street over MBTA and CONRAIL, Braintree
- Numerous bridge reconstruction, rehabilitation and replacement projects requiring roadway approach, R.O.W., horizontal and vertical realignment
- North Terminal Upper & Lower Level Realignment and Utility Relocation, Logan International Airport
- Access Road, Radio Facility and Operations Building, Winter Harbor

o AIRPORTS
- Amelia Earhardt General Aviation Terminal, Logan International Airport
- Bird Island Flats Access Road, Logan International Airport
- Renovations to North Terminal and Pier "D", Logan International Airport
- Renovations to Edson Building, Logan International Airport
- At-grade Parking Facility Redesign, Eastern Airlines Reservation Center, Logan International Airport

o RECREATIONAL FACILITIES
- Phelan Pool Rehabilitation, MDC, Boston
- Comfort Station, Sandwich
- Contact Station, Sandwich
- Administration and Garage Facilities, Sandwich
- Swimming Pool and Bathhouse Complex, Lowell
- Swimming Pool and Bathhouse Complex, Lawrence

PAUL I. RAZGHA, P.E. (continued)

- Swimming Pool and Bathhouse Complex, Fall River
- Swimming Pool and Bathhouse Complex, Brockton
- Swimming Pool and Bathhouse Complex, Methuen
- Skating Rink Roof Rehabilitation, Springfield
- Skating Rink Roof Rehabilitation, Worcester
- Skating Rink Roof Rehabilitation, Brockton
- In Czechoslovakia, Recreational Facilities for 120 Scouts

RESUME

NASRI M. BAHNAM, P.E.

EDUCATION

Bachelor of Science in Electrical Engineering, American University of Beirut

Northeastern University, Continuing Education Program, Building Technology, Heating and Ventilating Courses

PROFESSIONAL REGISTRATION

Professional Engineer, New Hampshire

GENERAL EXPERIENCE

Electrical Engineer with versatile background as a General Manager in a Construction Contracting Company, Project Manager, Design Engineer, and Project Supervisor. Capabilities extend from design concept through construction. Engineering experience includes: Medium and low voltage distribution, indoor and outdoor lighting systems, fire detection systems, HVAC and Other control systems, communications and life safety systems. Lighting systems include latest I.E.S., D.O.T. and F.A.A. recommendations. In addition to uniform distribution, systems have succussfully included minimum energy consumption and overall construction costs.

PROJECT EXPERIENCE

- Amelia Earhardt General Aviation Terminal, Logan International Airport, Direct and Indirect Lighting, Sound System, Fire Detection System, etc.
- Electric Gates & Video Monitoring of Various Drawbridges, Boston
- MBTA Green Line Relocation, North Station Area, Boston, MA
- North Station Electrical Substation, Mass. Designer Selection Board (DCPO)
- Merrimac Street Parking Garage, Haverhill, MA
- Dormitory Rehabilitation (3 buildings), Pease Air Force Base, NH Lighting, Power, Emergency Lighting, Fire Detection System, Telephone and Cable TV
- WWTP Renovations, MCI Bridgewater, Mass. Designer Selection Board (DCPO)
- Grand Avenue Bridge, (movable bridge), New Haven, CT
- MBTA Railroad Maintenance Facility, Five Yard, Boston, MA
- Franklin Park Children's Zoo, Boston, MA. Open air and indoor lighting and sound system, electric heating, telephone system, etc.
- Repairs to Control House, Irish Dam, Grafton, MA; DEM, Div. of Waterways
- Bus Garage Rehabilitation, WRTA, Worcester, MA
- Bartlett Street Bus Garage and Maintenance/Administrative Facility, (five building complex), Boston, MA (MBTA)
- Sanford Street Parking Garage, Attleboro, MA
- Grand Central Station, New York, Energy Conservation for lighting systems in large spaces.
- MBTA, Systemwide Emergency Tunnel Lighting Survey and Report
- St. Williams Church, Dorchester, MA; Main Service, Lighting, Power, Fire Detection Systems, Telephone and Intrusion System
- MBTA Saratoga Street Bridge Reconstruction, East Boston, Catenary Design
- New Sluice Gate, Lake Ripple Dam, Grafton; DEM, Div. of Waterways
- North Terminal Renovations, Logan International Airport, East Boston, Viaduct and Access Road Lighting
- BET Fueling and Sanding Facility, Somerville, MA
- BET Train Washing Facility, Somerville, MA
- Bowdoin-Charles Connector Study, MBTA, Boston, MA
- Boston Garden Substation, Mass. Designer Selection Board, DCPO
- Charles River Dam Drawbridge, MDC, Boston
- Bird Island Flats Access Road, Logan International Airport, East Boston Roadway, Taxiway and Security Lighting, and Traffic Signals & Controls
- General Aviation Building Renovation, Logan International Airport, E. Boston Direct Lighting, Sound System, Fire Protection System, Emergency Generator

RESUME

JUDITH O'MARA

EDUCATION

Associate of Engineering, Architectural Engineering Technology, Franklin Institute

Various Courses at University of Massachusetts and Windham College

GENERAL EXPERTISE

Eight years in design of Fire Protection, Plumbing and HVAC systems. Complete familiarity with all codes and standards dealing with Fire Protection, Plumbing and HVAC Requirements.

PROJECT EXPERIENCE

- o MBTA Railroad Maintenance Facility, Five Yard, Boston
- o MBTA North Station Platform
- o Commonwealth of Massachusetts, Energy Studies
- o General Electric, Jet Engine Test Cell No. 119 and Control Room
- o Edson Building Renovations, Logan International Airport
- o Pease Air Force Base, U.E.P.H. Dormitory Rehabilitation
- o Portsmouth Naval shipyard computer Facilities
- o Miscellaneous Mechanical Projects, Portsmouth Naval Shipyard, NH
- o Bell Telephone, Energy Studies
- o Technical Energy Audit, MCI Norfolk, Massachusetts Designer Selection Board
- o Energy Conservation Implementation, Logan International Airport, MASSPORT
- o Multilevel Parking Garage, Parcel NO. 3, Pittsfield, MA
- o Merrimac Street Parking Garage, Haverhill, MA
- o Fashion neckwear warehouse addition, Exeter, NH
- o Stop and Shop, Marlboro, MA, renovated Meat Packing Plant into Bakery
- o Corps of Engineers Research & Development lab, Natick; Steam Distribution System
- o Wang Laboratories Clean Rooms, Methuen, MA
- o MBTA North Station Control Tower, Boston, MA
- o MBTA Lynn Central Square Parking Garage and Platforms
- o MBTA Budd House, new heating system
- o MBTA Fuel Tank Replacement at Boston Engineer Terminal, Somerville
- o Family Housing, Haverhill, MA
- o Renovation to Office Building at 1 Milk St., including Historical Preservation.

CHARLES SACRE, P.E.

EDUCATION

Bachelor of Science in Civil Engineering, University of Saint Joseph, Lebanon
Post Graduate Diploma in Civil Engineering Hydraulics, University of Strathclyde, Glasgow, Scotland
Master of Science in Structural Engineering, University of Surry, Guildford, United Kingdom

PROFESSIONAL REGISTRATION

Professional Engineer, Lebanon

GENERAL EXPERTISE

Senior Civil/Structural/Hydraulics engineer with extensive and varied project background including bridges, roadways, floating road and structures, reservoirs, silos, water towers, WWTP's, residential and industrial buildings, tunnels, and site planning.

PROJECT EXPERIENCE

- o Bridge Rating Contract #88134 for various types of bridges for the Massachusetts Department of Public Works. Inspect, analyze and determine structural capacities of existing Massachusetts Highway Bridges.
- o Chelsea Street Bridge Dolphin and Fender System Design, Boston
- o MBTA Lynn Central Square, Parking Garage Phase III, Washington Street Bridge Replacement, and Station Modifications
- o Summer Street Bridge Rehabilitation, Boston
- o MBTA S&I Facility, Boston, MA
- o Lynn Central Square, Parking Garage
- o Boston Engine Terminal, Somerville, MA
- o Bus Garage, Worcester, MA
- o Charlestown Bridge, Replacement, Boston
- o Overview Engineering Services, Various Bridges City of Boston
- o Replacement of South Street Bridge, Waltham
- o Feasibility Study of Archdale and Gallivan Recreation Centers for New Building Progam

Below listed Foreign Projects were designed in accordance with ACI, ASTM, AISC, AASHTO and all other American standards:

- o IRAQ - Major 5 Km expressway between Al-Nissour Square and Habab Square in Bagdad included - 3 major interchanges - 11 bridges (9 prefab. post tensioned and 2 CIP post tensioned) - Floating 2 Km - 4 lane road with loops and ramps under maximum water head of 7m - 2 2-lane tunnels of 200 and 300m length

CHARLES SACRE, P.E. (continued)

- o SAUDI ARABIA
  - Design and supervision of 380Km of roads linking Turabah, Bisha, Kurmah, and Ramah including numerous bridges and the 400 meter Bisha Bridge
  - Design of Industrial Park including industrial planning, roads, infrastructure, utilities, power distribution and telecommunications systems and all public buildings in park
  - Master Planning and complete design of residential areas R1 and R2 of Yanbu Industrial City comprising town houses, apartments, villas, and other types of dwelling units, schools and other commercial and support facilities and design of infrastructure and all utilities and service.
- o BAHRAIN - 6 story office building including shopping center, Tubli Water Pollution Control Center; complete sewage treatment facilities
- o NIGERIA - Earth fill dam at River Girmache, 15m high
- o QATAR - Design of 600 bed hospital center at Doha
- o KUWAIT - Gravity Sewerage Network, Pressure lines and pumping stations, Three treatment plants
- o SUDAN - Cotton seed oil factories in Khartoum and Port Sudan
- o SYRIA - Soap Factory in Damascus

RESUME

DENIS MEHU, P.E.

EDUCATION

B.S. in Civil Engineering, University of Haiti
Hydrology Courses, National University of Columbia

PROFESSIONAL REGISTRATION

Professional Engineer: Massachusetts, New Hampshire

GENERAL EXPERTISE

Mr. Mehu has over 30 years of experience on a variety of projects including Roadways, Parkways, Parks, Playgounds, Dam Inspection, TOPICS, Track Alignment and Site Improvements. Responsibilities included horizontal and vertical Alignment, utilities, drainage, right-of-way, grading, profiles, cross-sections and earthwork.

PROJECT EXPERIENCE

- o Route 2, Lexington; Improvements to 2 mile section
- o Route 106, Halifax, Plymton, Kingston
- o Airpost Access Roads, Logan International Airport, East Boston
- o Reconstruction of Route 34, Connecticut
- o Parham-Chippenham Connector, Virginia
- o 14 miles of highway in Dighton and Berkeley
- o TOPICS in Billerica, North Andover, Saugus, Andover, Haverhill, Westwood
- o Conifer Hill Executive Office Park, Danvers, MA; Drainage Design
- o Dam Inspection in New England, Corps of Engineers, Waltham
- o MBTA Track Improvement Project (Systemwide)
- o Improvements to Taconic State Parkway, New York
- o Pawtucket Boulevard, Lowell, MA
- o Metropolitan Atlanta Rapid Transit Authority, Contract CN480
- o Cross Country Parkway/Saw Mill River Parkway Interchange, New York
- o Grading, Drainage and Utility Relocation at MBTA Everett Yard
- o Street Relocation, Drainage, etc. for Urban Redevelopment Projects in Hull and Fall River
- o Interstate Route 95
- o Fellsway Way Parkway, Boston
- o MBTA S&I Facility, Boston
- o Replacement of Centre Street Bridge over Trout Brook, Brockton
- o Rehabilitation of MBTA's New Hampshire Branch Rail Line (36 miles)
- o Replacement of South Street Bridge, Waltham

Haley & Aldrich, Inc.

Consulting

Geotechnical Engineers

Geologists

Hydrogeologists

Services
Haley & Aldrich, Inc. serves as a project team member or works in direct consultation with the owner, providing services in one or more of five principal categories.

Site characterization
Geological reconnaissance and mapping determine probable subsurface conditions at a site. From this information, the feasibility for construction, preliminary foundation and site development costs, and the anticipated scope of field explorations and related services are developed.

Field and laboratory tests
Field explorations, including test borings, rod probings, test pits and groundwater observation wells reveal representative profiles of underground conditions. Laboratory tests classify earth materials and assist in determining pertinent engineering properties.

The Underground World

Complex, unpredictable, variable—these terms begin to describe the geophysical world below the earth's surface.

Unlike construction materials such as steel, concrete and wood, the physical properties of soil and rock—hidden beneath the earth's crust—cannot be easily tested and measured. Similarly, determining the occurrence and movement of groundwater is complicated by changes in season, rainfall, temperature, geological factors and human activities.

With the technological advances in design and construction over the past thirty years, the need for subsurface information has become an increasingly important component in the development of buildings, tunnels, highways, bridges, dams and other structures. As a member of the design team, the geotechnical consultant contributes to the project development process an understanding and knowledge of this complex underground world.

Nature, to be commanded, must be obeyed.
Francis Bacon

A 120 ft. deep shaft blasted in bedrock for subway station

Clamshell bucket used to excavate a 60 ft. deep diaphragm foundation wall

Rock excavated from building site for re-use to form retaining walls

y & Aldrich, Inc. vides comprehensive vices including:

- characterization
- surface investigations
- n-situ testing
- oratory soil and rock ng
- rogeological evaluations
- nd hazardous materials assessments
- Foundation design recommendations
- Technical provisions of specifications
- Groundwater resources evaluation and development
- Design of dams and reservoirs
- Stability analyses of earth and rock slopes
- Underground engineering for tunnels, shafts and underpinning
- Design of dams for earth and rock
- Pre-construction surveys of abutting structures
- Blasting and vibration evaluations
- Underwater surveys
- Field instrumentation
- Construction and post-construction monitoring

New Techniques and Applications

Throughout its history, Haley & Aldrich has taken the position that conventional geotechnical procedures may not always be appropriate for the particular conditions of a site or the requirements of the project.

For the first major underground subway chamber constructed in bedrock, in metropolitan Boston, the firm identified and utilized an approach to tunnel design that incorporates a single support system rather than the more costly double support system typically installed during and after excavation.

For an urban office complex, Haley & Aldrich recommended a foundation concept and construction procedure unique to the region. A tied-back concrete diaphragm wall, constructed by the slurry trench method, was used for the first time in New England in response to the challenges and requirements of the project. Since then, Haley & Aldrich has employed this technique on more than a dozen major urban excavations.

These applications illustrate the firm's continuing effort to review new commercial products, techniques and data for incorporation into its practice.

Underlying Values

Finally, any presentation of the expertise and services of Haley & Aldrich, Inc. is incomplete without considering its underlying values and objectives.

From its inception, the firm has been dedicated to technical competence, responsive service, and ethical business practices. As the organization has grown over the years, it has retained its original commitment to maintaining a staff that is knowledgeable and challenged by its work, and to enhancing its capabilities in a way that contributes technically appropriate and economical solutions for its projects.

Installation of high capacity driven piles

Central downtown artery is the focus of a study of new below grade roadway.

Haley & Aldrich, Inc.

Consulting Geotechnical Engineers and Hydrogeologists

Haley & Aldrich, Inc. is a consulting engineering firm with a professional staff of over 100 geotechnical engineers, geologists and hydrogeologists, most of whom have advanced degrees in their respective areas of specialization.

In 1957, Haley & Aldrich became the first geotechnical partnership to establish a practice of its kind in New England. Over the years, the firm has participated in more than 6,000 projects in the Northeast, throughout the United States, and abroad.

Geotechnical engineering is a branch of civil engineering specifically concerned with the subsurface conditions of soil, rock and groundwater, and their relationship to constructed facilities.

The engineering design of all structures and any changes to the natural environment require an understanding of subsurface conditions within a project area. Geotechnical consultants—geotechnical engineers, geologists and hydrogeologists—evaluate the engineering properties of soil and rock occurring at a site to determine their expected behavior under varying conditions, and analyze the presence and significance of groundwater at the site.

It is from this evaluation that the engineering design evolves, adapting to existing conditions or modifying them to achieve the requirements of the project.

Steel H-Piles to support waterfront structure.

Excavation of transit tunnel in bedrock with reinforced cast-in-place concrete lining.

HALEY & ALDRICH, INC.

CORPORATE ORGANIZATION, QUALIFICATIONS AND EXPERIENCE

GENERAL

The following information provides a brief description of the history of Haley & Aldrich, Inc., its staff organization, awards, scope of services, laboratory facilities, quality assurance, and cost control.

HISTORY

Haley & Aldrich is a firm of consulting geotechnical engineers, geologists and hydrogeologists. The firm's geotechnical work includes soil and rock mechanics, foundation engineering, engineering geology, seismic risk analysis and instrumentation. Our environmental services range from environmental site assessments for real estate transfer to the remediation of major hazardous waste disposal sites. We provide a complete range of services to see our clients through all phases of site evaluation, design, construction and post-construction monitoring.

Since our founding in 1957, Haley & Aldrich has participated in more than 8,000 projects from highways, dams, tunnels and other infrastructure improvements to buildings from one-story warehouses to high-rises in excess of 40 stories. Although our work is concentrated in the Northeast, we routinely provide services throughout the U.S. and also have worked in numerous foreign locations.

STAFF ORGANIZATION

Haley & Aldrich is wholly owned by its twenty-five Principals, Associates and senior professional personnel, all of whom are full-time employees of the firm. The principal office and laboratories are located in Cambridge, Massachusetts. There are three branch offices, in Portland, Maine; Glastonbury, CT and Bedford, New Hampshire, and an affiliate office, H&A of New York, is located in Rochester, New York.

The total staff numbers approximately 280 with over 150 civil engineers, geologists, hydrogeologists, and scientists most of whom have received graduate degrees. Six hold doctoral degrees in geotechnical engineering and geology.

AWARDS

Most recently the firm won the 1987 American Consulting Engineers Council (ACEC) Grand Conceptor Award, the top award in New England, and a 1988 Honor Award from the national organization for its work on the Rowes Wharf Development. In 1985, Haley & Aldrich received an ACEC/NE Award for Excellence for the Massachusetts Bay Transportation Authority Porter Square Subway Station in Cambridge, Massachusetts. Other ACEC awards include a 1984 Award of Excellence for a "Lime Lagoon Closure Program" for the Eastman Gelatine Corporation in Peabody, Massachusetts; the 1981 Grand Conceptor's Award as geotechnical consultant for design and construction of the Trident drydock, Bangor, Washington; and in 1976, the Grand Conceptor Award for its work on "Sixty State Street, Protecting the Cradle of Liberty", Boston, Massachusetts.

SCOPE OF SERVICES

Haley & Aldrich normally serves as either a project design team member or in direct consultation with the Owner, providing reports containing soil, rock and groundwater data, interpretation of these data and conclusions and recommendations relative to geotechnical engineering, geologic and hydrogeologic aspects of the project.

A typical full-service Haley & Aldrich project includes the following scope and sequence. This list is routinely modified as needed to suit client needs and objectives:

- Geologic studies including literature reviews, air photo interpretation, reconnaissance and field mapping, as required to define subsurface conditions, feasibility of the site for construction and to determine preliminary foundation and site development requirements.

- Monitoring of subsurface explorations and conduct of field tests including boreholes, test pits, geophysical surveys, groundwater observation wells and piezometers, field permeability tests and groundwater sampling.

- Laboratory testing to classify soil and rock and determine engineering properties for design purposes.

  Engineering, geologic and hydrogeologic analyses and recommendations for foundations, earthwork, groundwater control or protection, and other geotechnical features of the project.

  Specification provisions for construction including foundations, dewatering and earthwork.

- Construction monitoring including observation of foundation construction and earthwork, associated field and laboratory testing, and geotechnical instrumentation required to monitor the behavior of the structure and adjacent property during and following construction.

- Client support in the regulatory process associated with environmental impact and permitting.

Some of the special services and capabilities of the firm and its key personnel include:

- Hydrogeologic studies related to groundwater, with special emphasis given to controlled and uncontrolled waste disposal sites.

- Design, installation and monitoring of geotechnical instrumentation.

- Blast and construction vibration monitoring.

- Seismic risk evaluations, earthquake engineering, and soil dynamics.

- Use of vertical sand and wick drains.

- Evaluation of frost and permafrost problems.

LABORATORY FACILITIES

Haley & Aldrich maintains fully-equipped soil and rock testing laboratories capable of performing standard classification, strength, consolidation and permeability tests. In addition, dynamic testing equipment is maintained for specialized cyclic triaxial and resonant column testing. A full array of rock mechanics laboratory equipment is used for the engineering classification of core and block samples recovered for rock engineering projects.

QUALITY ASSURANCE

The Quality Assurance Program has been developed in accordance with current and accepted industry practices and standards. It provides the framework by which geotechnical engineering, field and laboratory services are conducted. Manuals of technical procedures for laboratory testing and for field exploration and testing have been prepared. These procedures are the basis by

which the firm's laboratory and field work are performed. The manuals are also used for orientation and training of new personnel under the supervision of experienced key personnel. Quality assurance in engineering services provides control over the quality of studies and analyses and the presentation of data, results and recommendations in reports.

COST CONTROL

Haley & Aldrich exercises financial control of its geotechnical and environmental services, initially through a policy of having project proposals prepared by those who will manage the work. Thereafter, financial control includes a weekly posting of manpower and expenses, all furnished to the project manager on a category-related and percentage-expended computer printout. Weekly reports are reviewed by the Business Manager.

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Martin C. Murphy

Principal and Senior Vice President
Haley & Aldrich, Inc.

Experience

1960 - Present

Haley & Aldrich, Inc.
1966 Associate and Vice President
1972 Principal and Senior Vice President

Project engineer and project manager for geotechnical aspects of a broad range of projects. Experience includes water and wastewater treatment plants, pipelines, highways, bridges, buildings, waterfront structures, large site development projects such as regional shopping centers, permanent and temporary lateral earth support systems, and large storage tanks for liquified natural and propane gas, petroleum and municipal water systems.

The scope of experience ranges from preliminary feasibility studies, through design investigations, preparation of plans and specifications, to consultation and monitoring during construction. Individual projects have also included investigations of failures and testimony during litigation.

Highway experience includes numerous roadways, bridges and retaining walls and in a variety of soil conditions in the Northeast. Projects have included stabilization of soft soils by surcharging and sand drains, stabilization of side slopes in cuts, and design of roadway subdrain systems and pavement cross sections.

Wastewater treatment facility experience includes pumping stations requiring deep excavations in soft soils, the various plant structures, basins and tanks, river relocations, and dikes for flood protection. Pipelines in connection with this work have generally been large-diameter interceptors requiring deep excavations, frequently in poor soil/water conditions. Projects in urban areas have required evaluation of the possible impact of construction on adjacent structures and utilities, and the need and methods to control groundwater lowering areas adjacent to the construction. Pipeline experience also includes pipe jacking, river crossings and outfalls into rivers and harbors.

Experience in buildings ranges from single story shopping centers to high rise buildings in urban locations. Foundations have included spread footings, mats, caissons and a variety of pile types.

1954 - 1960 Edwards and Kelcey, Inc.

Soil Engineer with responsibility for geotechnical aspects of design of highways, bridges and municipal facilities.

1952 - 1954 U. S. Marine Corps

Mr. Murphy served as an artillery officer in the U. S. Marine Corps, with service in Japan and Korea.

1951 - 1952 Porter, Urquhart and Skidmore, Owings and Merrill

Junior Soil Engineer with duties including construction control and evaluation of airfield pavements at NATO bases in French Morocco.

1972 - 1976 Northeastern University (Lincoln College, Evening Div.)

Lecturer in Materials and Soil Mechanics.

Education

Massachusetts Institute of Technology, Cambridge, MA S.B. 1951

Graduate-level courses in Soil and Foundation Engineering, Concrete Technology, and Hydrology at Northeastern University, Boston, MA

Professional Registration

Massachusetts

Professional Societies

American Society of Civil Engineers
Boston Society of Civil Engineers Section, ASCE

0046Z/186

BRYANT ASSOCIATES

CONSULTING ENGINEERS

BOSTON - SYRACUSE

648 BEACON STREET
P.O. BOX 38
BOSTON, MASSACHUSETTS 02215-0038
TELEPHONE: (617) 247-1800

217 SOUTH SALINA STREET
SYRACUSE, NEW YORK 13202
TELEPHONE: (315) 479-7565

THE FIRM

Bryant Associates, a minority owned professional consulting engineering firm formed in 1976, serves a broad cross section of municipal, industrial, regional, state and federal clients in the survey, planning, design and construction management of environmental facilities; transportation oriented projects including highways, rail, parking facilities and seaport installations; and, civil works involving urban renewal, utilities, demolition and rehabilitation of buildings, streets, drainage and site development.

The principals of the firm are all professional engineers with more than 100 years of combined experience in the field of consulting engineering in several of the United States, Canada and abroad.

Bryant Associates is headquartered in Boston with a staffed regional office in Syracuse, New York. The professional staffs and support personnel at these locations, working in concert with one another, have the demonstrated ability and the capacity, born of long experience, to undertake the wide ranging assignments and to complete the various tasks within required schedules and budgetary constraints.

The principals of the firm have been involved in many facets of engineering in an administrative capacity. Their records emphasize their managerial ability in organizing and completing projects of a major scale within design and construction parameters.

The combined staff of Bryant Associates can bring to an assignment the professional qualities necessary to progress any project to a successful conclusion. Among these are the following:

- Indepth experience in working for private and public agencies.

- Proven results in the preparation of contract documents and specifications.

- Experience in coordinating the efforts of reviewing authorities, public and private agencies, co-designers and the community. The key staff of Bryant Associates are experienced in the organization and implementation of the team concept in the design of complex projects.

SURVEY AND MAPPING

The technical staff of Bryant Associates is complimented by four fully equipped survey parties with electronic distance measuring equipment and one second theodolites. These parties are fully experienced in:

- Topographic survey and mapping
- Property survey
- Engineering and Construction Stakeout
- Utility survey
- Subdivision Layout

SURVEYING

- Northeast Corridor Improvement Project, Washington, DC to Boston

  Owner: Federal Railway Administration, Washington, DC
  Service: Survey Mapping Safety Engineering & Project Management

- 13 Communities, Western, MA

  Owner: HUD/Fay, Spofford & Thorndike, Boston, MA
  Service: Photo Control Field Measurements at Streams and Structures

- Water Pollution Abatement Program, Manchester, NH

  Owner: City of Manchester, NH
  Service: Photogrammetry control, Topographic Survey

- Survey, Design for Security Fence, Westover, A.F.B., MA

  Owner: Corps of Engineers, New York, NY
  Service: Surveying, Preparation of contract documents for 40,000 L.F., Security Fence

- Facility Plan Mapping, Boston, MA

  Owner: Boston Water and Sewer Commission, Boston, MA
  Service: Horizontal & Vertical Control for photogrammetry

- Northeast Corridor Power Supply System

  Owner: Federal Railway Administration, Washington, DC
  Service: Surveying and site engineering for 24 electric sub-stations, New Haven to Boston

- Rehabilitation of 14 Stations, Harlem Division Line

  Owner: New York Metropolitan Transportation Authority New York, NY
  Service: Surveying, Site Engineering

- Nantucket Conveyance System Improvements

  Owner: Town of Nantucket, MA
  Service: Photo Controls Topographic Surveys Field Measurements

- Open End - Contract New England Area

  Owner: U.S. Army Corps of Engineers, New England Division Waltham, MA
  Service: Property line, Topographic and Hydrographic surveys

- Track Improvement Program, Rails & Bed

  Owner: Massachusetts Bay Transportation Authority, Boston, MA
  Service: Surveying and drainage on 70 miles of Transit System

NORMAN I. LIPSITZ

Associate/Chief of Surveys

EDUCATION/REGISTRATION

A. E. Wentworth Institute

Registered Land Surveyor in the States of Massachusetts and Rhode Island

MEMBER: American Congress on Surveying and Mapping

EXPERIENCE

Mr. Lipsitz's professional career spans more than 17 years of experience in all phases of land surveying.

At Bryant Associates, Inc., Mr. Lipsitz is the Chief Surveyor responsible for all field survey personnel, deed research, calculations, preparation of right-of-way drawings, property plans and related surveying requirements associated with various projects undertaken by the firm. Current projects include surveying services for the Central Artery - North Area for the Massachusetts Department of Public Works. He is also involved as the Chief Surveyor for the redevelopment of the Columbia Point Housing Authority and the North Station Transportation Improvement Project for the Massachusetts Bay Transportation Authority.

Mr. Lipsitz supervises the activities of Bryant Associates four (4) survey parties, including scheduling, coordinating the reduction of field notes and plotting of the field information.

Prior to joining Bryant Associates, Inc., Mr. Lipsitz was involved in all the surveying for the Southwest Corridor Project (Orange Line Relocation) for the Massachusetts Bay Transportation Authority. This involved surveying of existing conditions, surveying of property lines for the proposed takings and preparation of all right-of-way drawings required.

SECTION III

PROPOSAL

TEAM ORGANIZATION

Key Project Personnel

Paul C. K. Lu and Associates

Paul C. K. Lu — Supervising Project Designer

Mr. Lu brings to the Design Team his indispensable design expertise formulated as the result of serving nearly 20 years as Principal-In-Charge/Chief Project Manager at Paul C. K. Lu and Associates and as Senior Associate at Sasaki Associates, Watertown, Mass.

Christian L. Brown — Project Manager

Mr. Brown has served as Project Manager on a wide range of assignments during his four years with Paul C. K. Lu and Associates. With a specialty in both Public Sector and Open Space Projects, Mr. Brown has designed, coordinated and managed the successful completion of some $1,500,000 in construction on such projects in the last two years alone. Further to his credit, Mr. Brown serves as Project Manager for C.B.D. planning and design projects, urban design studies and a wide variety of projects for private sector clients.

Carolyn Cooney	Project Landscape Architect
Roberto Garcia	Project Landscape Architect
Ivy Ng	Technical Staff

Seelye, Stevenson, Value & Knecht

Paul Razgha	Project Manager
Nasri M. Bahnam	Electrical Engineer
Judith O'Mara	Plumbing Engineer
Charles Sacre	Civil/Structural Engineer

Haley & Aldrich, Inc.

Martin C. Murphy	Project Manager

Bryant Associates

Norman I. Lipsitz	Project Manager

Project Responsibilities

Paul C. K. Lu and Associates (PLA)

As prime consultants PLA will assume chief responsibility for all project efforts and serve to facilitate all communication and coordination efforts between the client and sub consultants. With specific regard to design we will undertake all landscape and streetscape design and direct subconsultant design efforts with regard to client programmatic objectives and aesthetic considerations.

Seelye, Stevenson, Value & Knecht (SSV&K)

SSV&K as engineering subconsultants will work in close coordination with PLA to produce irrigation and electrical improvement designs. In addition, SSV&K will review the existing retaining walls for structural integrity and make design recommendations for their ultimate repair if needed. During construction SSV&K will provide a project staff engineer to conduct resident engineering services which will prove especially valuable in the review geotechnical reparation efforts. SSV&K has a broad project history involving resident construction inspection services.

Haley & Aldrich (H&A)

With a wealth of experience on project efforts such as James Hayes Park, H&A will investigate the existing geotechnical site conditions and provide recommendations in the form of a report for correction efforts (for a more detailed description, see Scope of Services).

Bryant Associates (BA)

Bryant Associates will provide the Existing Conditions survey (for a more detailed description, see Scope of Services).

SCOPE OF SERVICES

Survey

Our survey subconsultant, Bryant Associates of Boston, MA will document all existing site conditions including all site structures, complete topographic information as well as pertinent utility data within the site and adjacent streets. The resulting document will serve as a base plan for all design work and as the Existing Conditions Plan for the construction documents.

Geotechnical Investigation & Recommendations

This work will be undertaken by the well known Geotechnical Engineering Firm of Haley & Aldrich (H&A) of Cambridge, MA. As our subconsultant, they are prepared to produce the necessary documentation to solicit bids for borings, monitor the boring contractor's operations in the field, perform laboratory testing of existing soil materials (for grain size classification, and organic content) research the history of the site with the Building Department and other pertinent agencies as well as the original park designer. These investigations will culminate in a written report describing both geotechnical findings and recommendations for construction. Further, these recommendations will include specifications for earthwork fill materials, compaction and testing. Finally, H&A will review all designs, specifications and construction information to ensure that all design work is implemented in accordance with their recommendations. The above does not include a Chapter 21E determination by H&A. The usefulness of such an undertaking may be best determined after the analysis of the existing subsoil conditions.

Preliminary Design, Construction Documentation, Resident Engineering Services

These scope items will be performed largely by Paul C. K. Lu and Associates (PLA) and our engineering subconsultants Seelye, Stevenson, Value & Knecht (SSV&K). Haley & Aldrich, Inc. (H&A) will also participate in this work but to a limited degree. We are prepared to perform this work as outlined in your RFP, however, we wish to make clear the following assumptions:

- Preliminary Design shall include the review and analysis of the existing site and conditions, the review analysis and development of the existing

schematic design and the soliciting of design and programmatic input from the BRA and neighborhood groups.

- Conferences/informal working meetings with BRA, other agency and neighborhood representatives shall be limited to approximately one meeting per month.

- Formal presentations requiring elaborate preparation time and ad hoc renderings and presentation drawings shall be limited to a maximum of three.

- Drawings and reports which may be required for the Public Improvement Commission (PIC) or other such agency in addition to drawings otherwise required in the performance of this work shall be billed at cost including reimbursable at the hourly rates indicated in the Fee Proposal below.

- The cost for one mylar reproducible set of original drawings, as well as, 15 bound sets of drawings and specifications for the purposes of bidding the project are included in the Fee Proposal.

- Costs for Resident Engineering Services have been formulated with the assumption of a continuous construction period of 6 months. Further, the inspector is assumed to be a staff engineer (from SSV&K) who has worked on the design portion of the project and who will be on site 40 hours per week. PLA, SSV&K and H&A. will perform what is typically called "construction observation" services. This involves periodic site visits, the checking of shop drawings and performing other administrative duties which are not handled by the resident construction inspector.

FEE PROPOSAL

Note:

Scope Items are divided below into two categories, Standard Scope Items and other Required Scope Items. The latter includes the Existing Conditions Survey, the Geotechnical Investigation with Recommendations and Resident Construction Engineering. Since on projects such as this, these services are commonly performed as additional services, we have "broken them out" separately to facilitate scope and fee comparisons.

Key to Prime and Subconsultant Fee Breakdowns:

PLA - Paul C. K. Lu and Associates
SSV&K - Seelye, Stevenson, Value & Knecht
H&A - Haley and Aldrich
BA - Bryant Associates

STANDARD SCOPE ITEMS

Preliminary Design

PLA	$ 9,700.00
SSV&K	$ 3,800.00
Sub Total	$ 13,500.00

Construction Documentation

PLA	$ 13,750.00
SSV&K	$ 5,500.00
H&A	$ 1,000.00
Sub Total	$ 20,250.00

Construction Services

PLA	$ 1,500.00
SSV&K	$ 750.00
Sub Total	$ 2,250.00

Construction Observation

PLA	$ 6,700.00
SSV&K	$ 2,300.00
H&A	$ 1,000.00
Sub Total	$ 10,000.00

TOTAL

92,000

OTHER REQUIRED SCOPE ITEMS

Existing Conditions Survey

1 cost = 611,250
+ cost H&A survey

BA.....$ 3,400.00 Sub Total

Geotechnical Investigation with Recommendations

611,250
92,000
93,000

Note:
Included in this cost is the expense of test borings as charged to H & A by the boring contractor (approximately $2500.00).

Borings	$ 2,500.00
Investigation and Report	$ 6,500.00

795,250
estimated TOTAL cost

H&A.....$ 9,000.00 Sub Total

Resident Engineering

Project Staff Engineer 40 hours per week for 6 month anticipated construction period.

SSV&K.....$33,600.00

SUMMARY

STANDARD SCOPE ITEMS

Preliminary Design	$13,500.00
Construction Documentation	$20,250.00
Bidding	$ 2,250.00
Construction Observation	$10,000.00

Sub Total.....$46,000.00

OTHER REQUIRED SCOPE ITEMS

Existing Conditions Survey	$ 3,400.00
Geotechnical Investigation (etc.)	$ 9,000.00
Resident Engineering	$ 33,600.00

Sub Total.....$ 46,000.00

STANDARD SCOPE ITEMS	$46,000.00
OTHER REQUIRED SCOPE ITEMS	$46,000.00
PROJECT FEE TOTAL (Upset Limit Not To Exceed)	$92,000.00

Reimbursable Expenses
It should be noted that the fees above include all reimbursable costs. Reimbursable expenses shall be billed at cost and include the following categories:

Printing, xeroxing, photographic, travel (mileage and parking), test, borings, testpits, surveys.

Hourly Billing Rates
Cost for work other than that described above will be billed at the hourly rates below:

Paul C. K. Lu and Associates

Principal/Chief Designer	$70/hr.
Associate/Project Manager	$50/hr.
Project Landscape Architect	$40/hr.
Technical Staff	$30/hr.
Draftsperson/Administrative	$25/hr.

Seelye, Stevenson, Value & Knecht

Principal/Project Manager	$95/hr.
Chief Engineer	$65/hr.
Project Engineer	$45/hr.
Draftsperson	$33/hr.

Bryant Associates, Inc.

Chief Surveyor	$75/hr.
Party Chief	$35/hr.
Drafter	$30/hr.
Survey Technician	$26/hr.
Instrument Person	$26/hr.
Rod Person	$21/hr.

Haley & Aldrich, Inc.

Principal	$125/hr.
Senior Engineer	$ 82/hr.
Staff Engineer	$ 65/hr.
Assistant Engineer	$48.50/hr.
Senior Geologist	$78.50/hr.
Staff Geologist	$ 44/hr.
Inspection Technician	$33.50/hr.
Lab Technician	$ 32/hr.
Drafter	$44.50/hr.
Word Processor	$ 38/hr.
Office Assistant	$ 30/hr.

Note: Principal is listed above due to likely tehnical involvement in the project.

SECTION IV

RELATED PROJECTS

PAUL C. K. LU and ASSOCIATES (DBE)

Landscape Architecture / Urban Design / Site Planning

The award-winning, minority owned firm of Paul C. K. Lu and Associates (DBE) practices landscape architecture, site planning and urban design. **One of our special concentrations is on master planning, design, and implementation of urban design and open space projects.** Utilizing a multi-disciplinary approach, our goal is to create the highest quality open space planning and design projects within the clients required timeframe and budget limitations. The firm has won 15 national and international planning and design awards to date. Our selected project list follows:

(P) Prime Contractor
(C) Consultant
(JV) Joint Venture
(IE) Individual Experience

OPEN SPACE PLANNING AND DESIGN

o **Spicket River Park, Lawrence, Massachusetts** (P)

Planning, design and construction documents, and field observation for 9 acre active and passive park. Active park including basketball court, softball field and multiple use football and soccer fields. Passive park including picnic area, nature trail and parking. For the Lawrence Redevelopment Authority, City of Lawrence, Massachusetts.

o **Mullaney and Leonard Parks, Lawrence, Massachusetts** (P)

Master planning, design development, construction documentation and supervision of construction for 2 parks including Little League Baseball fields, basketball courts, handball court and tot lot. For the Department of Planning and Community Development, City of Lawrence, Massachusetts.

o **Lynn Heritage State Park Visitors Center** (P)
(Current Project)

Site planning, design, and construction documents for a passive park, multi-purpose plaza, and parking facilities for the Visitors Center. For Commonwealth of Massachusetts, Department of Environmental Management, Boston, Massachusetts.

o **Columbia River Front Park, Columbia, South Carolina** (P)

Urban design, landscape architectural service, preparation of construction documents, and field observation for 3.5 mile long river front park. Work included plazas, pedestrian path, jogging path, bicycle path, visitor center, overlook parking and nature trail. For the Department of Economic Development, City of Columbia, Columbia, South Carolina.

o **Concord Playing Fields Improvement Program, Concord, Massachusetts** (P)

Planning, design, preparation of construction documents and maintenance manual for 5 playgrounds to serve as prototypes for renovation of other athletic fields in the Town of Concord Improvements include the refurbishing and regrading of Soccer, Little League and High School Baseball Fields. For the Department of Parks and Recreation, Town of Concord, Concord, Massachusetts.

o **Worcester Commons, Worcester, Massachusetts** (IE)

The renovation of the six acre commons park was a part of the downtown revitalization. The project for the city's Department of Planning included schematic and construction documents with urban plazas, underground parking garage, reflecting pools, lighting and new plantings. For the Department of Planning, City of Worcester, Worcester, Massachusetts.

o **Master Plan of Western Canal, Lowell, Massachusetts** (P)

Urban design studies for a six block long Historic Mall/Town Canal located in the center of Lowell. Analysis of land use activities, recreation, open space, vehicular and pedestrian systems, and phasing alternatives. For the Department of Planning and Development, City of Lowell, Lowell, Massachusetts.

o **Western Canal Beautification, Lowell, Massachusetts** (P)

Site design for construction documents and supervision of a three block renovation of the canal. The project included several canal overlooks and new walks improving canal access while providing safety railings, improved light, street realignments, site furniture and plantings to give an improved image to a declining neighborhood. For the Department of Planning and Development, City of Lowell, Lowell, Massachusetts.

o **Payson Park, Belmont, Massachusetts** (P)

Revitalization and upgrading of and existing park located on the site of an abandoned elementary school in a residential neighborhood in Belmont, Massachusetts. Services included landscape architectural design for playfield and other recreation areas and master plan for future park improvements. For Department of Engineering, Town of Belmont, Massachusetts.

o **Southwest Corridor Linear Park, Boston, Massachusetts** (IE)

Planning, design and construction documents for a two mile linear park along the alignment of the existing Amtrak Boston-Maine Commuter line. For the Massachusetts Bay Transportation Authority (MBTA), Boston.

o **Doane Street Park, Lowell, Massachusetts** (P)

Master planning for a new park within a Public Housing Project Area, including basketball court, children's play area, tennis court and jogging tracks, new lighting and planting material. For the Department of Planning, City of Lowell, Lowell, Massachusetts.

o **Upper Common Rehabilitation, Fitchburg, Massachusetts** (P)

Landscape architecture services for downtown common. Rehabilitation items including pedestrian paths, sculpture fountain, plazas, park furniture and bandstand, sprinkler systems, major trees and lawn replacement. For the Department of Planning, City of Fitchburg, Fitchburg, Massachusetts.

o **Gateway Mall and Waterfront Park, St. Louis, Missouri** (P)

Prize winning design in the international competition for renovation of 25 blocks in the CBD and Gov. Center. The design scheme included a linear active park, mixed use plazas, fountains, sitting area underground parking, a grand boulevard and a waterfront park. The competition was sponsored by St. Louis Inc.

o **State Park at Rockwood Hall, Mt. Pleasant, New York** (IE)

Preparation of a park plan for 150 acres including a one mile Hudson River frontage in lower Westchester County. The plans for the undeveloped park were prepared following the environmental studies and responsive to the specific site features and amenities. For the New York State Office of Parks and Recreation.

o **Broad Square Park Statesville, North Carolina** (P)

Urban design and landscape architectural service for downtown revitalization project, including plantings, ornamental paving, lighting, fountains, playgrounds and display areas along several blocks in the center of the historic area of "Olde Town", Statesville, North Carolina. For Downtown Merchants Association, Statesville, North Carolina.

o **Natick Common, Natick, Massachusetts** (P)

Urban design and landscape architectural services for a historic town common next to Natick Center. Planning and design for pedestrian park, amphitheater, monument plaza, park furniture, lighting and planting and grading design. For the Department of Planning, Town of Natick, Natick, Massachusetts.

o **East Bridgewater Common, East Bridgewater, Massachusetts** (P)

Landscape architectural services for a town common. Rehabilitation items including monument, pedestrian paths, bandstand, lighting, planting and irrigation systems. For Town Common Committee, City of East Bridgewater, East Bridgewater, Massachusetts.

o **Western Gateway Urban Heritage Park,** (IE)
North Adams, Massachusetts

Master planning and design for the revitalization and adaptive reuse of the Historic Freight Yard District. Schematic and construction document for entire project including Common, Amphitheater, and Visitor Center. For the Commonwealth of Massachusetts, Department of Environmental Management, Boston, Massachusetts.

o **Columbia River Front Park Master Plan,** (P)
Columbia, South Carolina

Master planning of 350 acre river front of downtown Columbia, South Carolina. Studies included land use, visual analysis, vehicular and pedestrian system program, historic preservation, archeology studies, etc. For the City of Columbia, South Carolina.

o **Walden Greenway Development, Charlotte, North Carolina** (P)

Planning and design of 250 acre greenway within Mecklenburg County residential area. Services included site capability study, master planning, design guidelines and Phase One Implementation. For the Parks and Recreation Department, Charlotte, North Carolina.

URBAN PLANNING AND DESIGN

o **Lowell Historical Central Business District Streetscape,** (P)
Lowell, Massachusetts

Master planning, design vocabulary and development guidelines, for mile long Historic Downtown Urban Design Study. Landscape architecture and civil engineering services for Phase I and Phase II implementation. For the Department of Community Development, City of Lowell, Lowell, Massachusetts.

o **Market Square Urban Design, Fayetteville, North Carolina** (P)

Schematic design of a regional landmark and it's surroundings. Services included Old Market Building Renovation, redesigning of plazas and traffic re-routing. For the City of Fayetteville, North Carolina.

o **Framingham Downtown Revitalization** (P)
Framingham, Massachusetts

Master planning and urban design for Downtown Central Business District. Landscape architectural services for Phase I and Phase II Implementation. For the Town of Framingham, Framingham, Massachusetts.

o **Augusta Water Street Signage Improvement, Augusta, Maine** (P)

Facade and Signage Improvement Program and Development Guidelines for a main street at the State Capital. Preparation of case study for implementation. For the Department of Community Development, City of Augusta, Augusta, Maine.

o **Ecumenical Plaza, Lowell, Massachusetts** (P)

Urban planning design and implementation for an Urban Plaza, between two Landmark Churches, in a historic neighborhood. For the City of Lowell, Lowell, Massachusetts.

o **Boston Central Business District, Boston, Massachusetts** (IE)

Urban planning study for Boston Central Business District. Study included land use, pedestrian/ vehicular system land use, parking system development and the redevelopment of various sites. For The Boston Redevelopment Authority, Boston, Massachusetts.

o **Fayetteville Transit Mall, Fayetteville, North Carolina** (C)

Urban design and implementation for Bus/Pedestrian Mall at Downtown Fayetteville. Established citizen participation program and secured funding mechanisms for implementation. For the City of Fayetteville, North Carolina.

o **Raleigh Central Business District Streetscape** (P)

Urban design and landscape architecture services for 10 blocks of downtown streetscape. For the City of Raleigh, North Carolina.

o **Statesville Downtown Urban Design, Statesville, North Carolina** (C)

Master planning, landscape architectural services and facade and signage design for Statesville Central Business District, Statesville, North Carolina.

o **Amesbury Downtown Streetscape, Amesbury, Massachusetts** (P)

Urban design and landscape architectural services for Amesbury Central Business District. Services included Grant Application. For the Town of Amesbury, Massachusetts.

o **Rochester Central Business District, Rochester, Minnesota** (IE)

Urban design services for Core Area of Existing Central Business District and preparation for long range growth strategies. For Rochester Downtown Development Corporation, Rochester, Minnesota.

o **St. Louis Gateway Mall Planning and Design** (P)
St. Louis, Missouri

Urban design and landscape architectural services for 24 blocks at Downtown St. Louis. Design elements including open space systems, vehicular and pedestrian systems, parking systems and general massing of all blocks. For Downtown St. Louis, Inc., St. Louis, Missouri.

o **Hot Springs Central Business District, Hot Springs, Arkansas** (JV)

Urban design and landscape architectural services for Central Business District of a resort town within the Hot Springs National Park For the City of Hot Springs, Arkansas.

o **Winchester Urban Design, Winchester, Massachusetts** (P)

Master plan for Central Business District. Urban design and landscape architectural services for Phase I and Phase II Implementation. For Winchester, Massachusetts.

o **Greenville Main Street Transit Mall, Greenville, South Carolina** (C)

Urban design, feasibility study for Main Street Transit Mall, Transit Transfer Facility and Multi-Modal Transit Center. For Greenville Transit Authority, Greenville, South Carolina.

o **Worcester C.B.D. Open Space Study** (IE)
Worcester, Massachusetts

Urban Planning and Design for an Existing Downtown Open Space Project including Planning of Pedestrian and Vehicular Movement Systems, Design and implementation of an Urban Park, a Plaza, a Reflecting Pool and Underground Parking Garage. For the Department of Planning, Worcester, Massachusetts.

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

HONORABLE KIRKMAN FINLAY, JR.
Mayor

WILLIAM C. OUZTS
Councilman

T. PATTON ADAMS
Councilman

RUDOLPH C. BARNES, JR.
Councilman

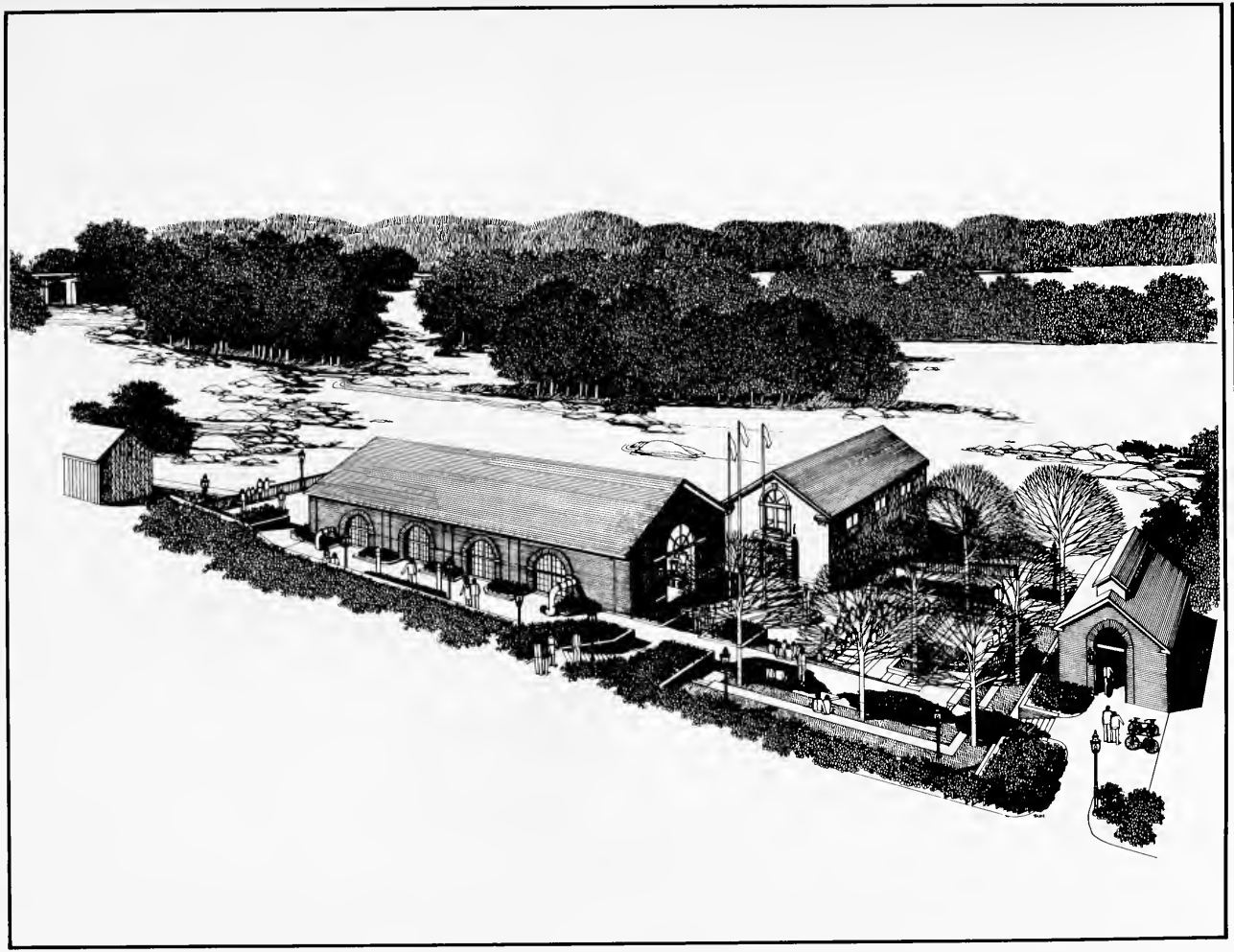
PAUL Z. BENNETT
Councilman

GRAYDON V. OLIVE, JR.
City Manager

Paul C.K. Lu & Associates — Boston, Mass., Charlotte, N.C.
Architects, Landscape Architects, Planners, Urban Designers

B.P. Barber & Associates — Columbia, S.C.
Consulting Engineers

Stevens & Wilkinson — Columbia, S.C., Atlanta, Ga.
Associated Architects



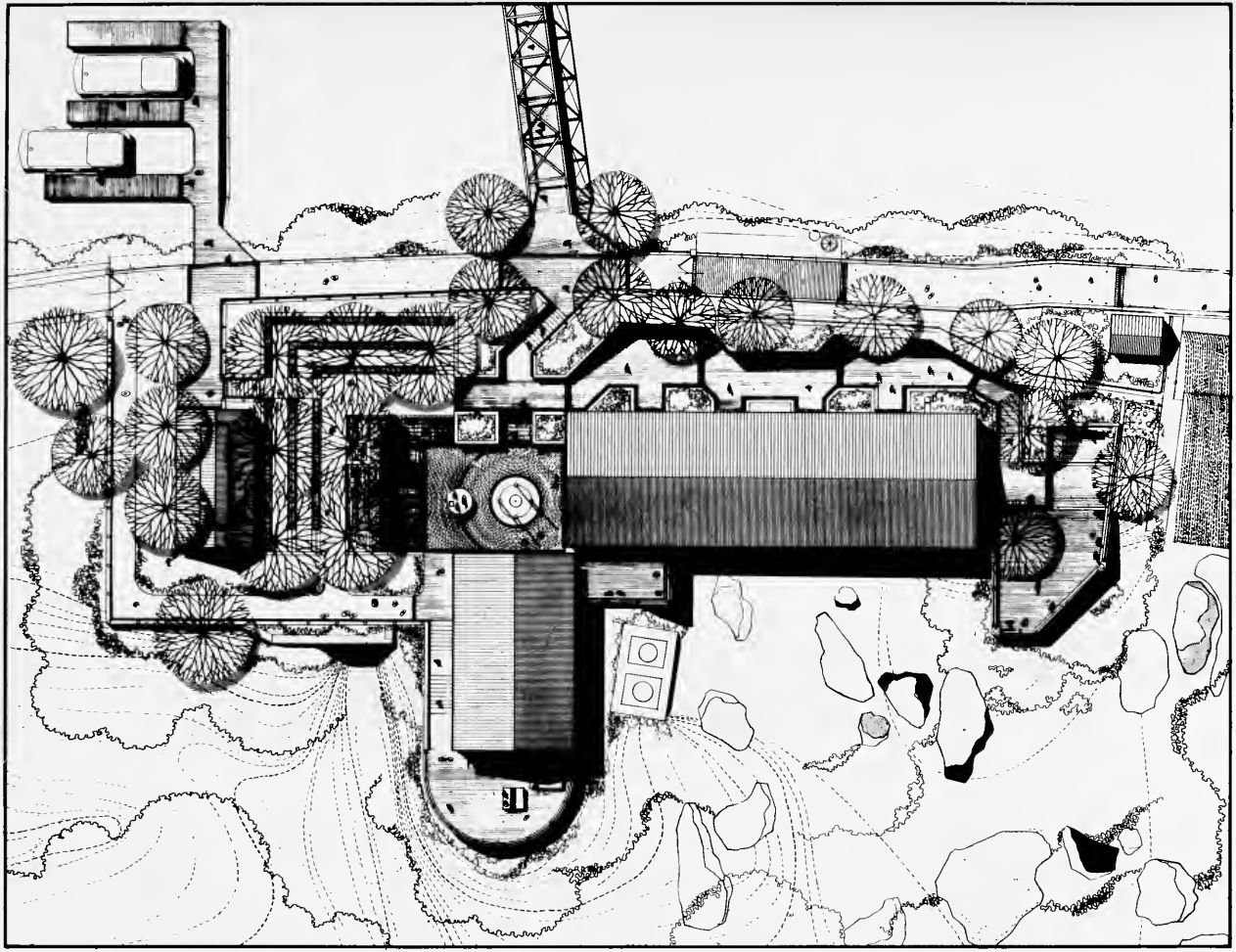
COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

PAUL C.K. LU & ASSOCIATES
ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
68 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

PUMP HOUSE
VISITOR CENTER

PERSPECTIVE



CITY OF COLUMBIA
VIRTUTIS VIRTUTIS REGNA

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
95 SHERMAN AVENUE
BELMONT, MASSACHUSETTS 02178

PUMP HOUSE
VISITOR CENTER

TURBINE OUT FLOW

TO DIVISION DAM — Walking, Bicycling, Jogging, & Electric Carts

BARGE TICKETS

AMPHITHEATRE

ENTRY PLAZA

PUMP HOUSE NO.1

Historic Display Of:
1. History Of Old Planned City, Columbia,S.C. (1786)
2. History Of Canal & Energy System (1819)
3. History Of Oldest Urban Prison (1866)
4. History Of Old City Water Work System (1820)

UPPER OVERLOOK

SPILLWAY, WATERFALL, & SPILLWAY BRIDGE

TO HYDRO PLANT — Walking, Bicycling, Jogging & Electric Carts

SECTION A-A

MID OVERLOOK

LOWER OVERLOOK

TO DIVISION DAM — Walking, Bicycling, Jogging & Electric Carts

RENTAL STORAGE

AMPHITHEATRE

PUMP HOUSE NO.2

River Ecology & Wildlife Display

PUMP HOUSE NO.1

UPPER OVERLOOK

SPILLWAY, WATERFALL, & SPILLWAY BRIDGE

TO HYDRO PLANT — Walking, Bicycling, Jogging, & Electric Carts

SECTION B-B

SCALE: 0 5 15 30 60 FEET

CITY of COLUMBIA — OPTIMA VIRTUTUM REGINA

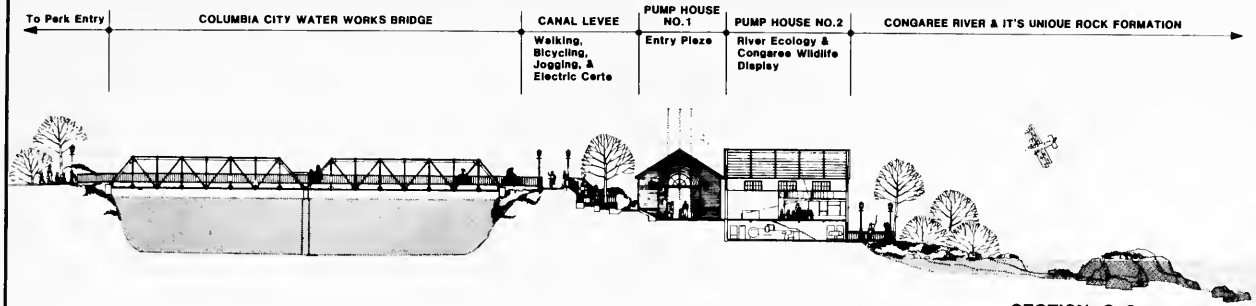
COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

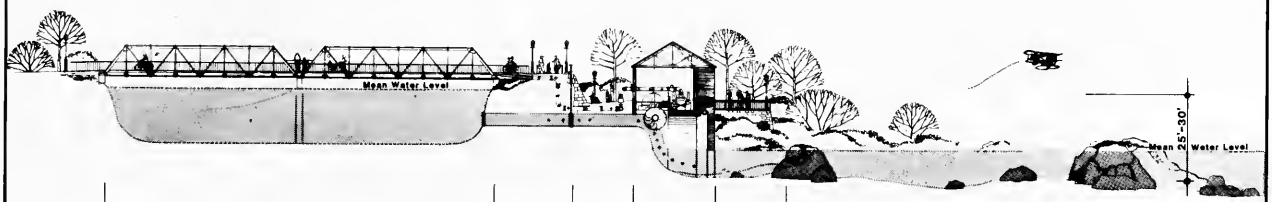
PAUL C.K. LU & ASSOCIATES
ARCHITECTS PLANNERS
LANDSCAPE ARCHITECTS
65 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

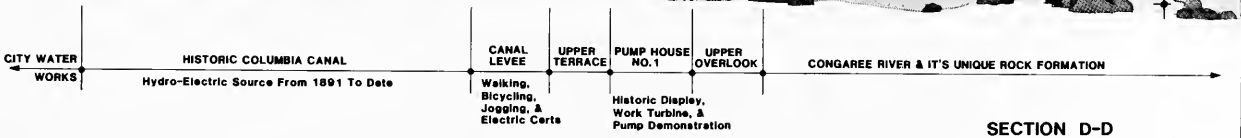
PUMP HOUSE VISITOR CENTER

SECTION



SECTION C-C





SECTION D-D

SCALE: 0 5 15 30 60 FEET

CITY OF COLUMBIA
JUSTITIA VIRTUTUM REGINA

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

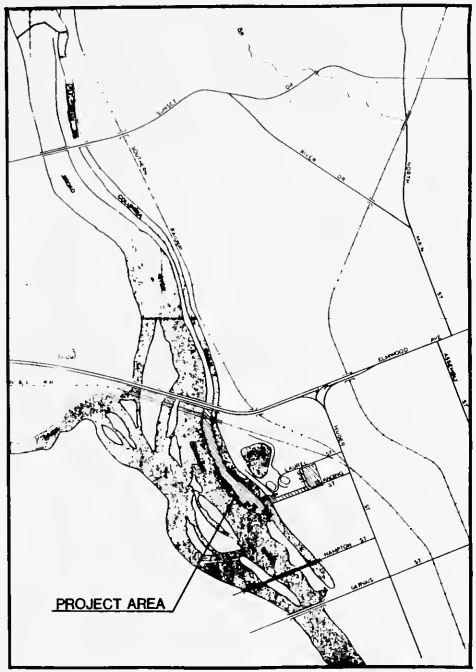
PAUL C.K. LU & ASSOCIATES
ARCHITECTS, PLANNERS
LANDSCAPE ARCHITECTS
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

PUMP HOUSE VISITOR CENTER

SECTION

VICINITY PLAN

SCALE 1" = 1000'



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COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

PAUL C.K. LU & ASSOCIATES
ARCHITECTS • LANDSCAPE ARCHITECTS
PLANNERS • URBAN DESIGNERS
BOSTON, MASS • CHARLOTTE, N C

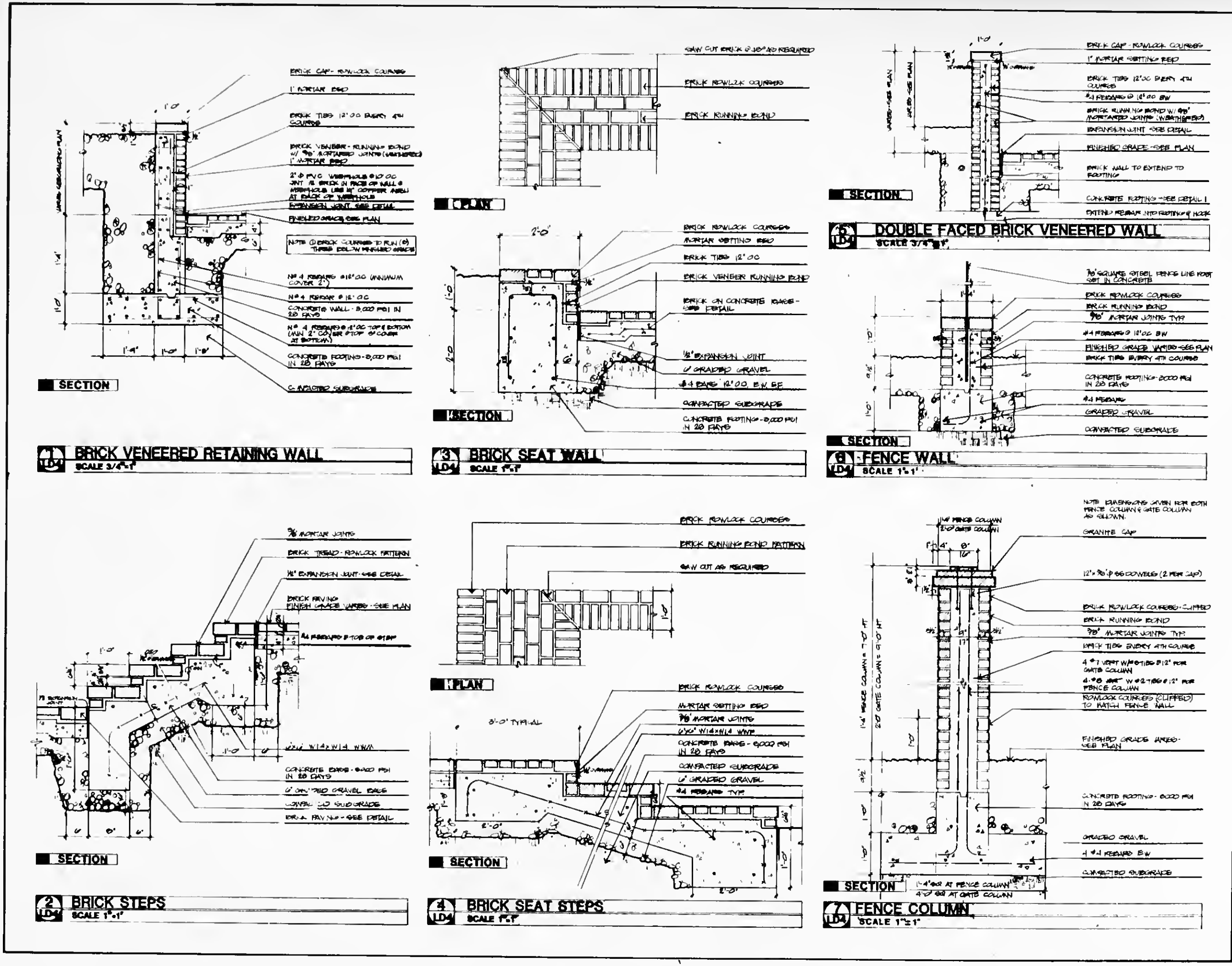
B. P. BARBER & ASSOCIATES
CONSULTING ENGINEERS
COLUMBIA, SOUTH CAROLINA

INDEX TO DRAWINGS & LOCATION PLAN

REVISION

SCALE
DATE
DRAWN
CHECKED
APPROVED

L-2



COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

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BOSTON, MASS • CHARLOTTE, N C

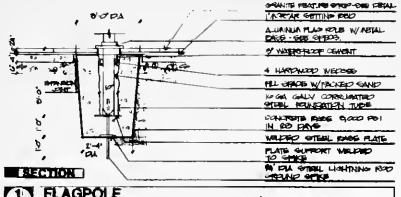
B. P. BARBER & ASSOCIATES
CONSULTING ENGINEERS
COLUMBIA, SOUTH CAROLINA

SITE DETAILS

REVISION

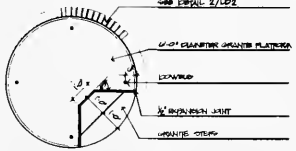
SCALE AS SHOWN
DATE
DRAWN
CHECKED
APPROVED

LD-4

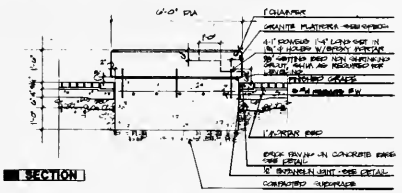


SECTION

1 LD5 FLAGPOLE
SCALE 1/2"=1'



PLAN



SECTION

2 LD5 GRANITE PLATFORM
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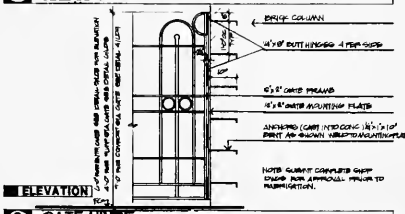
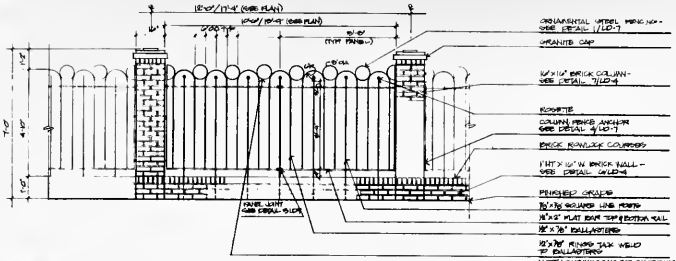


ELEVATION

3 LD5 GATE HINGE
SCALE 3/4"=1'



ELEVATION

4 LD5 ENTRY PLAZA FENCE
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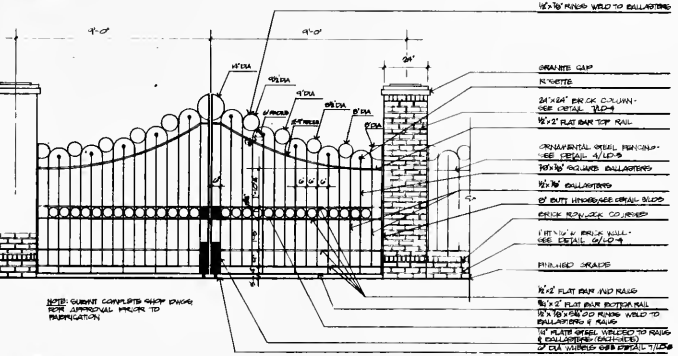

ELEVATION

5 LD5 ENTRANCE PLAZA GATE
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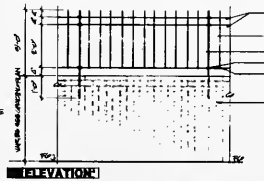
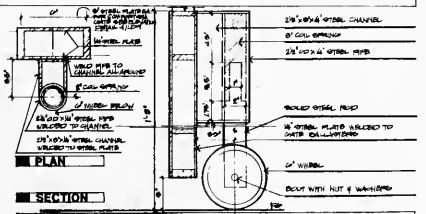


ELEVATION



PLAN

SECTION

6 LD5 COMFORT STATION FENCE
SCALE 1/2"=1'

7 LD5 GATE WHEEL
SCALE 3"=1'

CITY OF COLUMBIA
VIRTUTIS VIRTUTUM EXEMPLUM

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

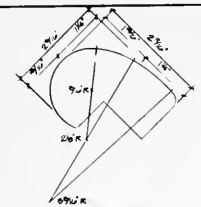
PAUL C.K. LU & ASSOCIATES
ARCHITECTS · LANDSCAPE ARCHITECTS
PLANNERS · URBAN DESIGNERS
BOSTON, MASS. · CHARLOTTE, N.C.

B.P. BARBER & ASSOCIATES
CONSULTING ENGINEERS
COLUMBIA, SOUTH CAROLINA

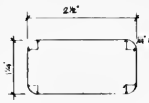
SITE DETAILS

REVISION	SCALE AS SHOWN DATE 15 DEC 1986 DRAWN LWB CHECKED TJ/JH APPROVED PL

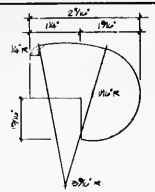
LD-5



TOP SLAT - SECTION X-X

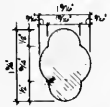


STANDARD SLAT-SECTION Y-Y



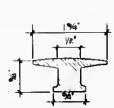
FRONT SLAT-SECTION Z-Z

WOOD SECTIONS

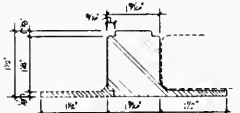


SECTION A-A

SECTION B-B



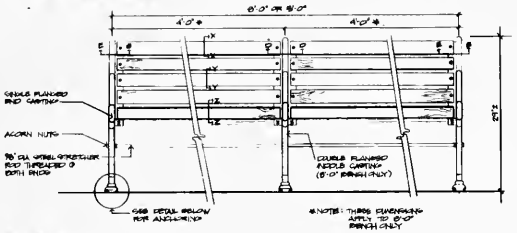
SECTION C-C



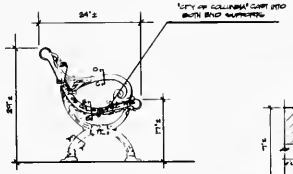
SECTION D-D (COUPLE PLANKS)

SECTION E-E (SINGLE PLANKS)

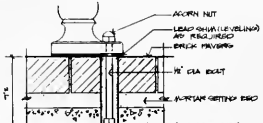
CAST IRON SECTIONS



FRONT ELEVATION

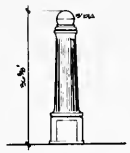


SECTION

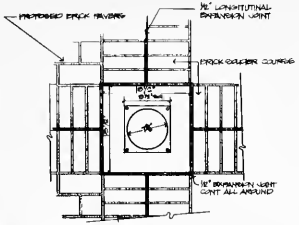


ANCHORING

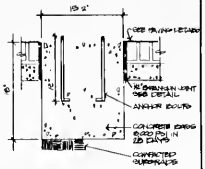
1 VICTORIAN BENCH
LD6 NOT TO SCALE



ELEVATION (NOT TO SCALE)

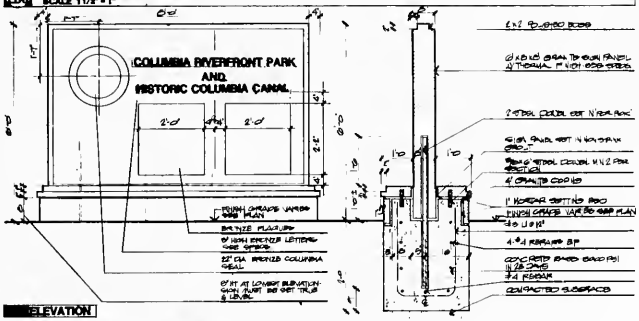


PLAN



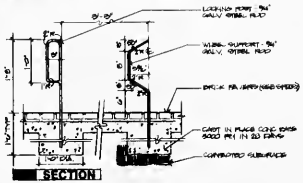
ANCHORING

2 CAST ALUMINUM BOLLARD
LD6 SCALE 1 1/2" = 1'



ELEVATION

3 GRANITE ENTRY SIGN
LD6 SCALE 3/4" = 1'



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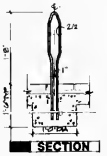

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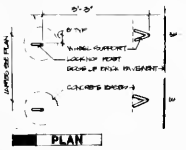


PLAN

4 BIKE RACK
LD6 NOT TO SCALE

CITY OF COLUMBIA
JUSTITIA VIRTUTUM REGINA

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

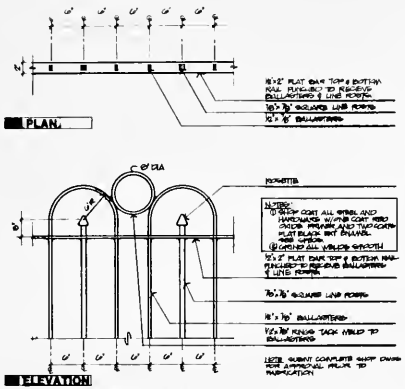
PAUL C.K. LU & ASSOCIATES
ARCHITECTS • LANDSCAPE ARCHITECTS
PLANNERS • URBAN DESIGNERS
BOSTON, MASS • CHARLOTTE, N.C.

B.P. BARBER & ASSOCIATES
CONSULTING ENGINEERS
COLUMBIA, SOUTH CAROLINA

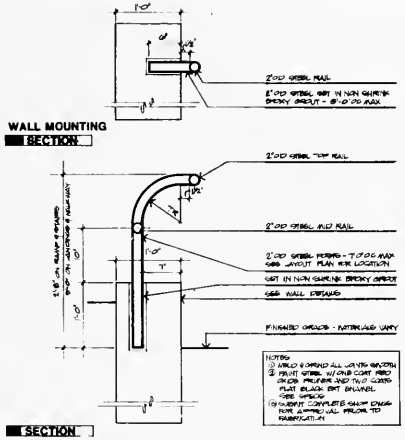
SITE DETAILS

REVISION	
	SCALE AS SHOWN DATE 15 DEC 1981 DRAWN JW CHECKED TW JH APPROVED PL

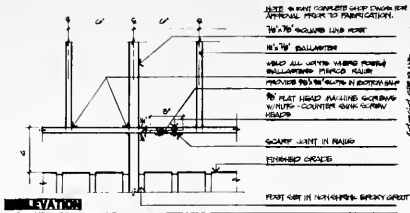
LD-6



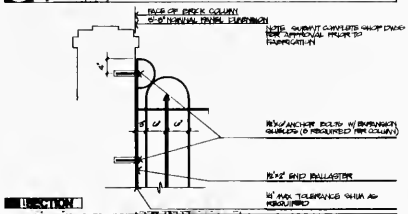
1 LD7 ORNAMENTAL FENCE
SCALE 1 1/2"=1'



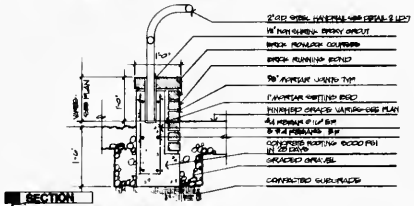
2 LD7 HANDRAIL
SCALE 1 1/2"=1'



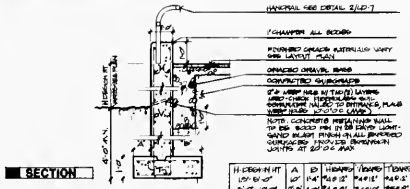
3 LD7 TYPICAL PANEL JOINT
SCALE 3"=1'



4 LD7 COLUMN/FENCE ANCHORING
SCALE 1"=1'

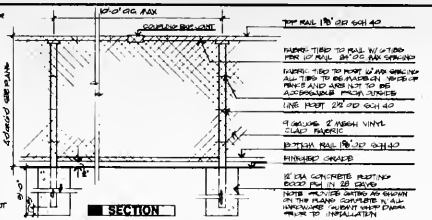


5 LD7 HANDRAIL WALL
SCALE 1"=1'

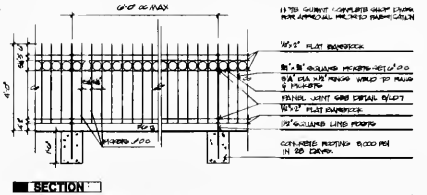


H	A	D	HEAVY	HEAVY	HEAVY
15'-0"-0"	12"	1'-4"	4'-6 1/2"	7'-6 1/2"	4'-6 1/2"
5'-0"-12'-0"	12"	1'-4"	4'-6"	7'-6 1/2"	7'-6 1/2"

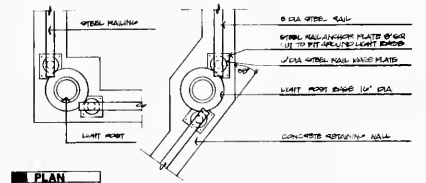
6 LD7 CONCRETE RETAINING WALL at RAMP
SCALE 1/2"=1'

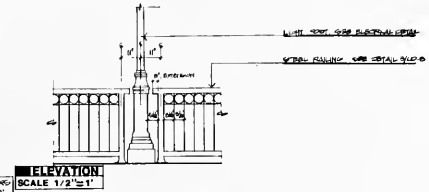


7 LD7 CHAIN LINK FENCE
SCALE 3/4"=1'



8 LD7 ORNAMENTAL PICKET FENCE
SCALE 1 1/2"=1'





9 LD7 LIGHT POST/STEEL RAIL at pump station overlook
SCALE AS SHOWN

CITY of COLUMBIA
JOSHUA VIRTUTUM REGINA

COLUMBIA RIVERFRONT PARK AND HISTORIC COLUMBIA CANAL

COLUMBIA, SOUTH CAROLINA

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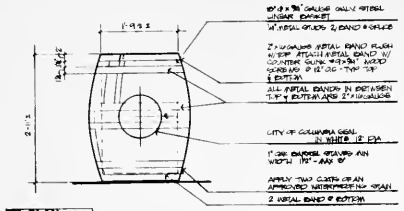
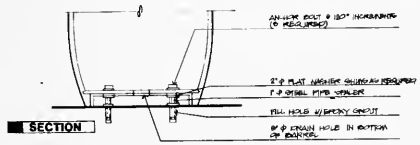
COLUMBIA, SOUTH CAROLINA

SITE DETAILS

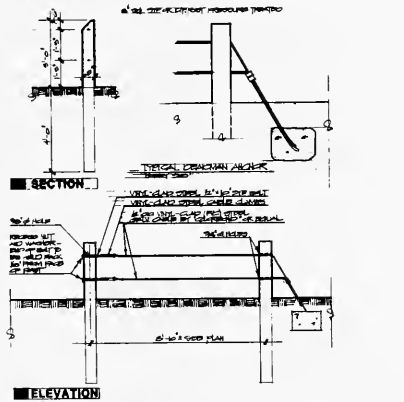
REVISION	
	SCALE AS SHOWN
	DATE 15 DEC 1981
	DRAWN JAD
	CHECKED TCJ/JH
	APPROVED PCL

LD-7

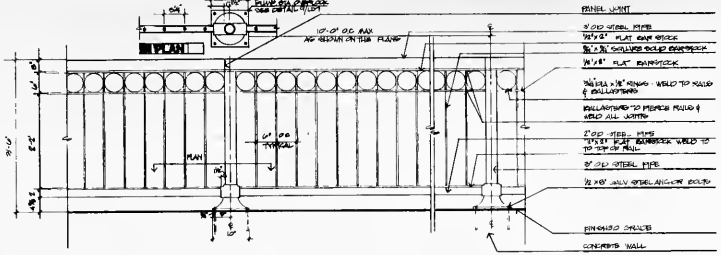




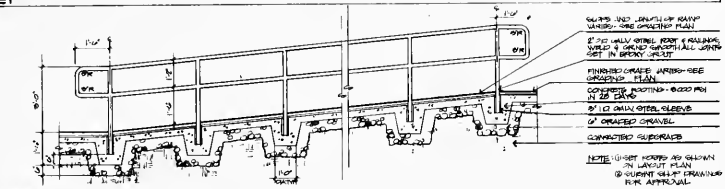
1 LD8 TRASH CONTAINER
SCALE 1 1/2"=1'



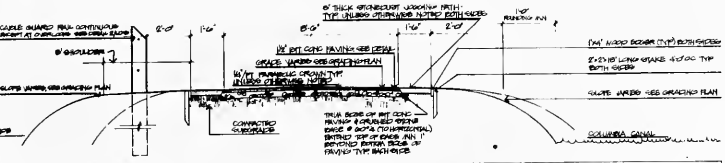
2A LD8 POST AND CABLE ALTERNATE #1,2,3
SCALE 1/2"=1'



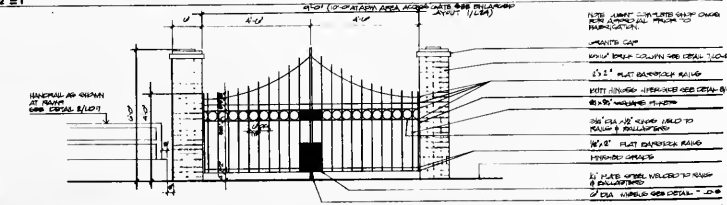
3 LD8 STEEL RAILING
SCALE 1"=1'



4 LD8 RAMP HANDRAIL
SCALE 1/2"=1'



5 LD8 BIKE PATH ALTERNATE #1,2,3



6 LD8 PUMP STATION GATE
SCALE 1/2"=1'

CITY of COLUMBIA
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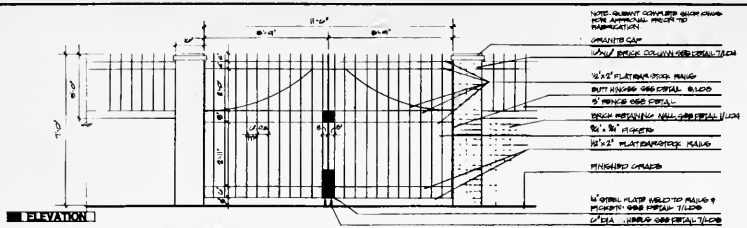
CONSULTING ENGINEERS
COLUMBIA SOUTH CAROLINA

SITE DETAILS

REVISION

SCALE AS SHOWN
DATE 15 DEC 80
DRAWN
CHECKED
APPROVED

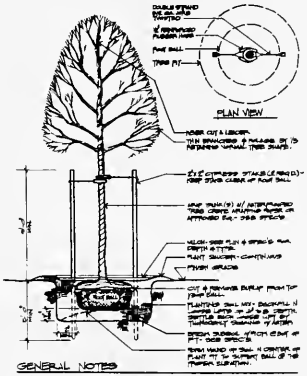
LD-8



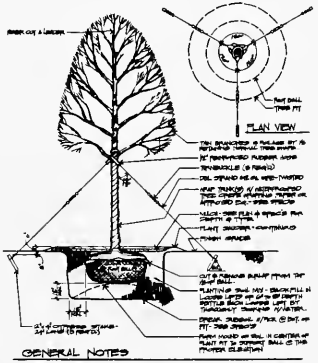
4 LD9 COMFORT STATION GATE
SCALE 1/2"=1'

PLANT LIST ALTERNATE NO. 9

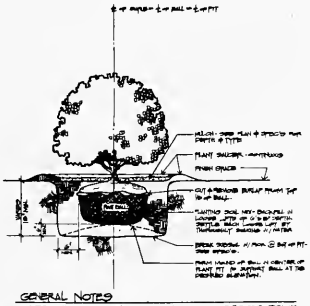
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES				
10	ACER RUBRUM	RED MAPLE	6"-4½" CAL	B&B & BURLAP SPECIMEN
19	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	14' HEIGHT	B&B MINIMUM STEM 1½" CAL
81	CORNUS FLORIDA	FLOWERING DOGWOOD	2½"-4" CAL.	B&B SPECIMEN
55	LAGERSTROEMIA INDICA	CRAPE MYRTLE	3"-3½" CAL	B&B SPECIMEN
5	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	4"-4½" CAL.	B&B SPECIMEN
4	MAGNOLIA SOULANGIANA	SAUCER MAGNOLIA	3½"-4" CAL.	B&B SPECIMEN
10	MYRICA CERIFERA	BAYBERRY	4½"-5" CAL	B&B SPECIMEN
3	PINUS PALUSTRIS	LONGLEAF PINE	14'-16' HT	B&B SPECIMEN
30	PINUS STROBUS	WHITE PINE	14'-16' HT	B&B SPECIMEN
17	PINUS TAEDA	LOBLOLLY PINE	14'-16' HT	B&B SPECIMEN
4	PLATANUS OCCIDENTALIS	SYCAMORE	4½"-5" CAL	B&B SPECIMEN
9	QUERCUS LAURIFOLIA	LAUREL OAK	4½"-5" CAL	B&B SPECIMEN
19	QUERCUS NIGRA	WATER OAK	4"-5½" CAL.	B&B SPECIMEN
94	QUERCUS PHELLOS	WILLOW OAK	4½"-5" CAL.	B&B SPECIMEN
2	QUERCUS VIRGINIANA	LIVE OAK	4"-4½" CAL.	B&B SPECIMEN
SHRUBS				
110	LONICERA SEMPERVIRENS	TRUMPET HONEYSUCKLE	2'-2½' SPD.	B&B SPECIMEN
23	ILEX CRENATA "STOKES"	STOKES JAPANESE HOLLY	2'-2½' SPD.	B&B SPECIMEN
39	FORSYTHIA SUSPENSA	SIEBOLD FORSYTHIA	2'-2½' SPD.	B&B SPECIMEN
4	JASMINUM MUDIFLORUM	WINTER JASMINE	18"-24" SPD	B&B SPECIMEN
23	LEUCOTHOE FONTANESIANA	DROOPING LEUCOTHOE	2'-2½' SPD.	B&B SPECIMEN
16	MAHONIA FORMOSA	CLUSTER MAHONIA	2'-2½' SPD.	B&B SPECIMEN
121	MYRICA CERIFERA	WAX MYRTLE	2'-2½' SPD.	B&B SPECIMEN
139	PIERIS FLORIBUNDA	MOUNTAIN ANDROMEDA	2'-2½' SPD.	B&B SPECIMEN
30	RHODODENDRON CATAWBIENSE	CATAWBA RHODODENDRON	2½"-3' SPD	B&B SPECIMEN
78	RHODODENDRON INDICA "FIELDERS"	INDIAN AZALEA WHITE	3'-3½' SPD	B&B SPECIMEN
38	RHODODENDRON INDICA "DAFFOD"	INDIAN AZALEA SALMON	2½'-3' SPD.	B&B SPECIMEN
136	RHODODENDRON INDICA "JUDGE"	INDIAN AZALEA SALMON	2'-2½' SPD.	B&B SPECIMEN
39	RHODODENDRON LATEVIRENS	WILSON RHODODENDRON	18"-24" SPD	B&B SPECIMEN
91	RHODODENDRON OBTUSUM	CORAL BELL RHODODENDRON	2'-2½' SPD.	B&B SPECIMEN
152	RHODODENDRON OBTUSUM	DELAWARE VALLEY WHITE RHOD.	18"-24" SPD	B&B SPECIMEN
13	RHODODENDRON OBTUSUM	HINODEGIRI RHODODENDRON	2'-2½' SPD	B&B SPECIMEN
13	RHODODENDRON ROSEUM ELEGANS	ROSEAN RHODODENDRON	2½"-3' SPD.	B&B SPECIMEN
75	TRACHELOSPERMUM ASIATICUM	YELLOW STAR JASMINE	2 YEAR	POTTED
15	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	2 YEAR	POTTED
VINES				
350	BUNGONIOUS FORTUNEI	WINTER CREEPER	2 YEAR	POTTED
4,810	HEDERA HELIX "BALTICA"	BALTIC ENGLISH IVY	2 YEAR	POTTED
11	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	2 YEAR	POTTED
1500	VINCA MINOR	PERIWINKLE	2 YEAR	POTTED



1 LD9 TREE PLANTING - STAKING
SCALE 1/2"=1'



2 LD9 TREE PLANTING - GUYING
SCALE 1/2"=1'



3 LD9 SHRUB PLANTING
SCALE 1/2"=1'

CITY of COLUMBIA
DIVITIA VIRTUTUM REGINA

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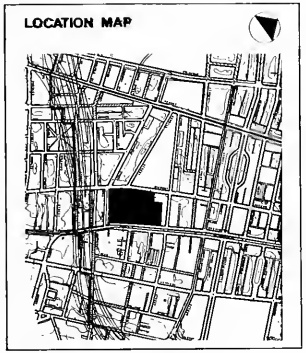
PLANNERS • URBAN DESIGNERS
BOSTON, MASS • CHARLOTTE, N.C.

SITE DETAILS

PLANTING DETAILS

REVISION	
	SCALE AS SHOWN DATE 10-DEC-78 DRAWN [illegible] CHECKED [illegible] APPROVED [illegible]

LD-9



PLANS FOR IMPROVEMENTS TO:

RAMSEY PARK

BOSTON, MASSACHUSETTS

1988 INAUGURAL

LIST OF DRAWINGS

L1. EXISTING CONDITIONS
L2. DEMOLITION PLAN
L3. LAYOUT PLAN
L4. PLANTING PLAN
L5. GRADING PLAN
L6. DETAILS
L7. DETAILS
L8. DETAILS
L9. DETAILS
L10. DETAILS
L11. DETAILS
L12. DETAILS

CONTRACT NO:

PREPARED FOR:

BOSTON PARKS AND RECREATION

FUNDED IN PART BY EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS,
DIVISION OF CONSERVATION SERVICES, URBAN SELF HELP PROGRAM

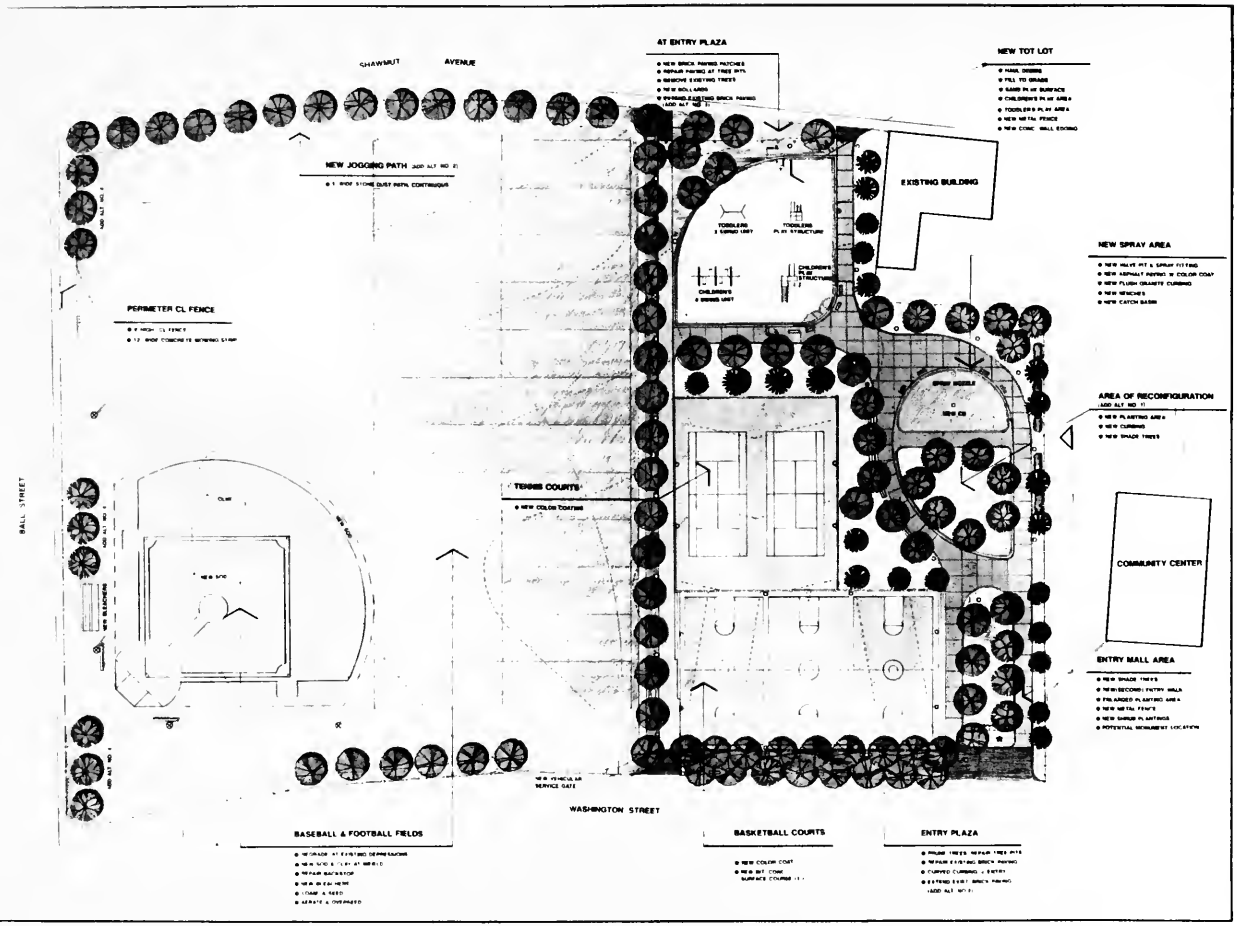
THE HONORABLE RAYMOND L. FLYNN, MAYOR

WILLIAM B. COUGHLIN, COMMISSIONER

PAUL C.K. LU AND ASSOCIATES
LANDSCAPE ARCHITECTS
134 BEACH STREET, BOSTON, MA 02110

KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY STREET, WALTHAM, MA 02154

BRYANT ASSOCIATES, INC.
SURVEY CONSULTANTS
648 BEACON STREET, BOSTON, MA 02215



RAMSEY PARK

BOSTON MASS

LEGEND

- EXISTING DECIDUOUS TREE
- NEW DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- NEW EVERGREEN TREE
- POTENTIAL ENTRY
- NEW SHRUBS
- EXISTING BENCH
- NEW BENCH
- NEW BIT. CONC. PAVING
- CONC. PAVING, NEW EXISTS
- WATER FOUNTAIN
- LIGHTING
- LIGHTING
- LIGHTING
- EXISTING CL FENCE
- NEW CL FENCE
- EXISTING METAL FENCE
- NEW METAL FENCE
- NEW STONE DUST SURFACE
- NEW BRICK PAVING
- POTENTIAL MONUMENT LOCATION
- GRANITE CURB

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES

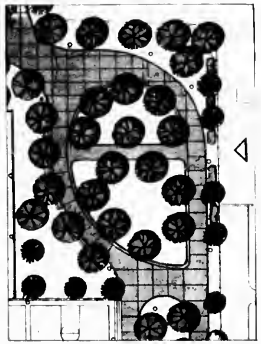
LANDSCAPE ARCHITECTS
URBAN DESIGNERS, PLANNERS
14 MAIN ST. WATERTOWN, MA

KEYES ASSOCIATES

CIVIL ENGINEERS
100 MINOT ST. WALTHAM, MA

BASIC DRAWING

1



BASE BID DESIGN (FOR ALT NO 1)

- NEW GRANITE CURB
- NEW SHADE TREES
- NEW STONE DUST SURFACE

SECTION A - A

ELEVATION AT WASHINGTON STREET ENTRY

RAMSEY PARK

BOSTON MASS

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C K LU & ASSOCIATES

LANDSCAPE ARCHITECTS
URBAN DESIGNERS PLANNERS
[illegible] BOSTON MA

REYES ASSOCIATES

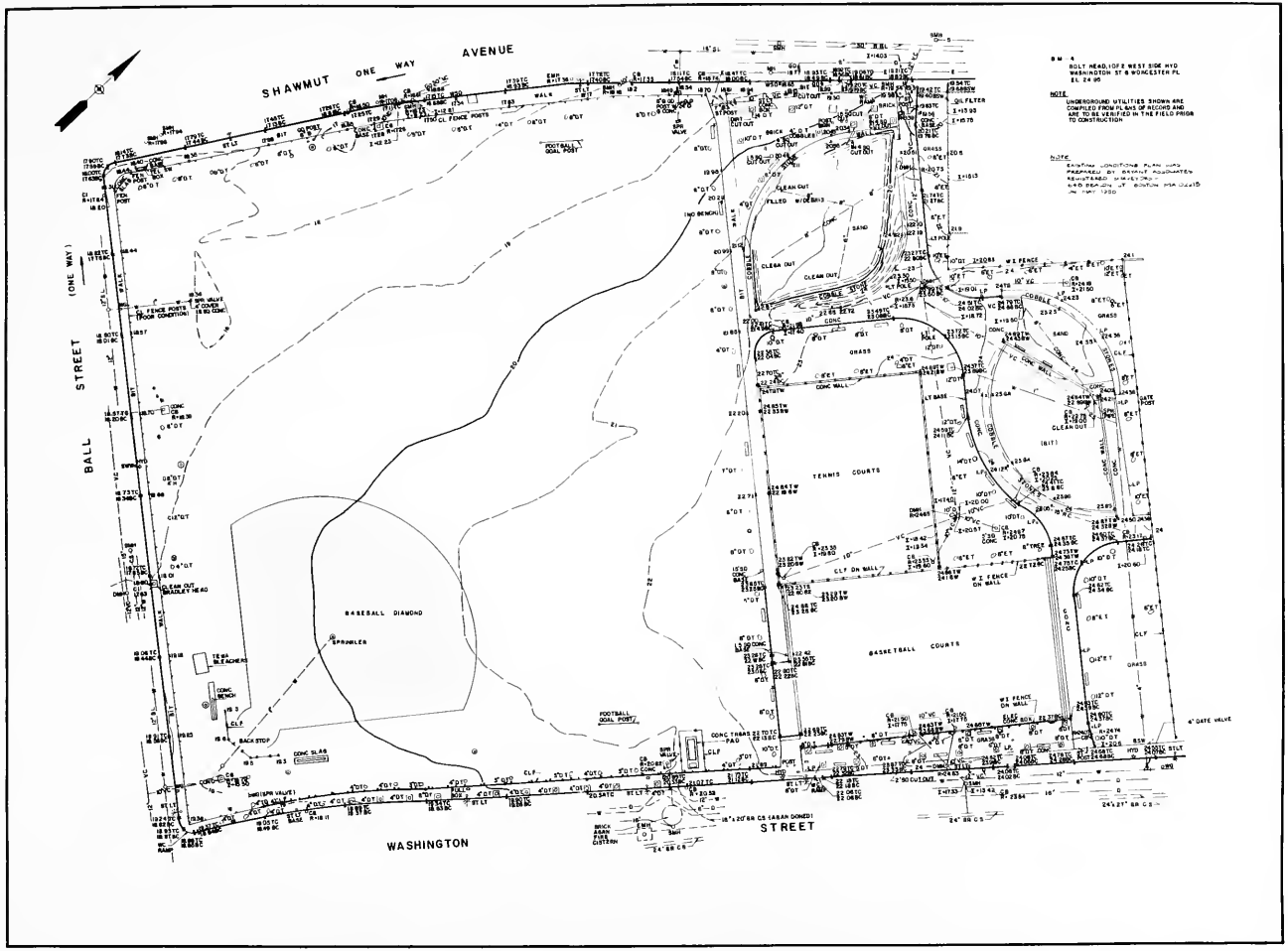
CONSULTING ENGINEERS
[illegible] MA

BRYANT ASSOCIATES, INC

SURVEYS INCORPORATED
[illegible] MA

BASIC DRAWING

2



HAMSEY PARK

BOSTON, MASS.

LEGEND

W F	WATER FOUNTAIN
DMH	DRAIN MANHOLE
W M H	WATER MANHOLE
W S	WATER GATE
R	RIM
I	INVERT
D	DRAIN
W	WATER
E	ELECTRIC
FL LT	FLOOD LIGHT
T C	TOP OF CURB
B C	BOTTOM OF CURB
B S W	BASIN OF WIDEWALK
G & E	GROUND ELEVATION
C L F	CHAIN LINK FENCE
20	CONTOUR
CONC	CONCRETE
BIT	BITUMINOUS
H WD	HARD WOOD
T W	TOP OF WALL
B W	BOT OF WALL
MON	MONUMENT
TR GRS	TRANSFORMER
C B	CATCH BASIN
HYD	HYDRANT
G	GAS
SMH	SEWER MANHOLE
GS	GAS GATE
GD	GAS DRIP
LP	LIGHT POLE
STLT	STREET LIGHT
PB	PULL BOX
W I FENCE	WROUGHT IRON FENCE
SPR	SPRINKLER
C I	CURB INLET
W C RAMP	WHEEL CHAIR RAMP
W SO	WATER SHUT OFF
	BENCH WITH CONC PAD
	DECIDUOUS TREE
	EVERGREEN TREE
	DEAD TREE
	COBBLE STONE TREE PIT
	16' 6 FL LT POLE 3/4" CONC

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES

LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS
134 BEACH ST, BOSTON, MA 02110

KEYES ASSOCIATES

CONSULTING ENGINEERS
ONE MOODY ST, WALTHAM, MA 02154

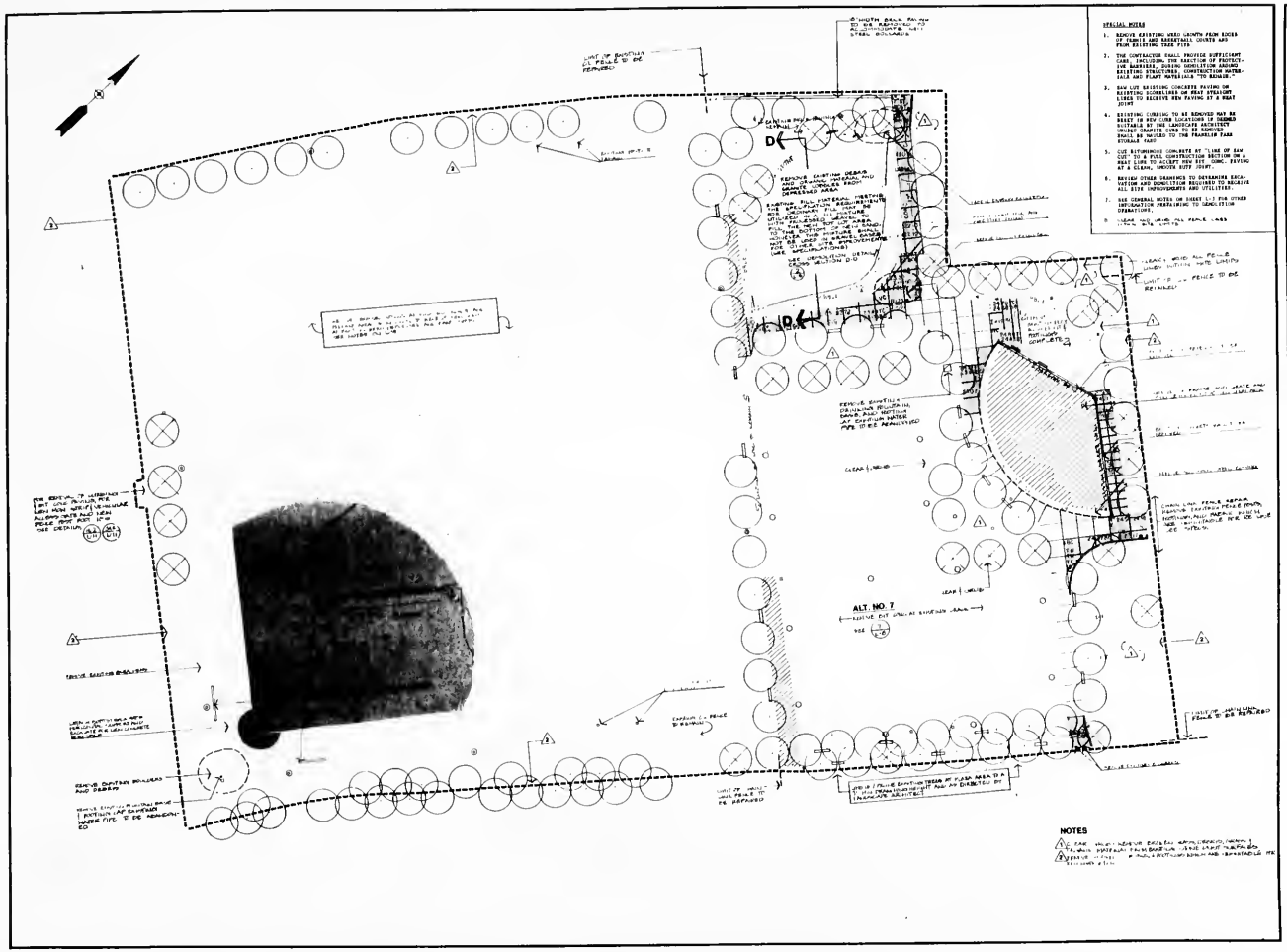
BRYANT ASSOCIATES, INC.

SURVEY CONSULTANTS
648 BEACON ST BOSTON MA 02215

EXISTING CONDITIONS

SCALE 1"=20' 0"
DATE SEPT 26, 1990
DRAWN
CHECKED
APPROVED

L-1.



RAMSEY PARK

BOSTON, MASS.

LEGEND

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES
LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS
134 BEACH ST. BOSTON, MA 02110

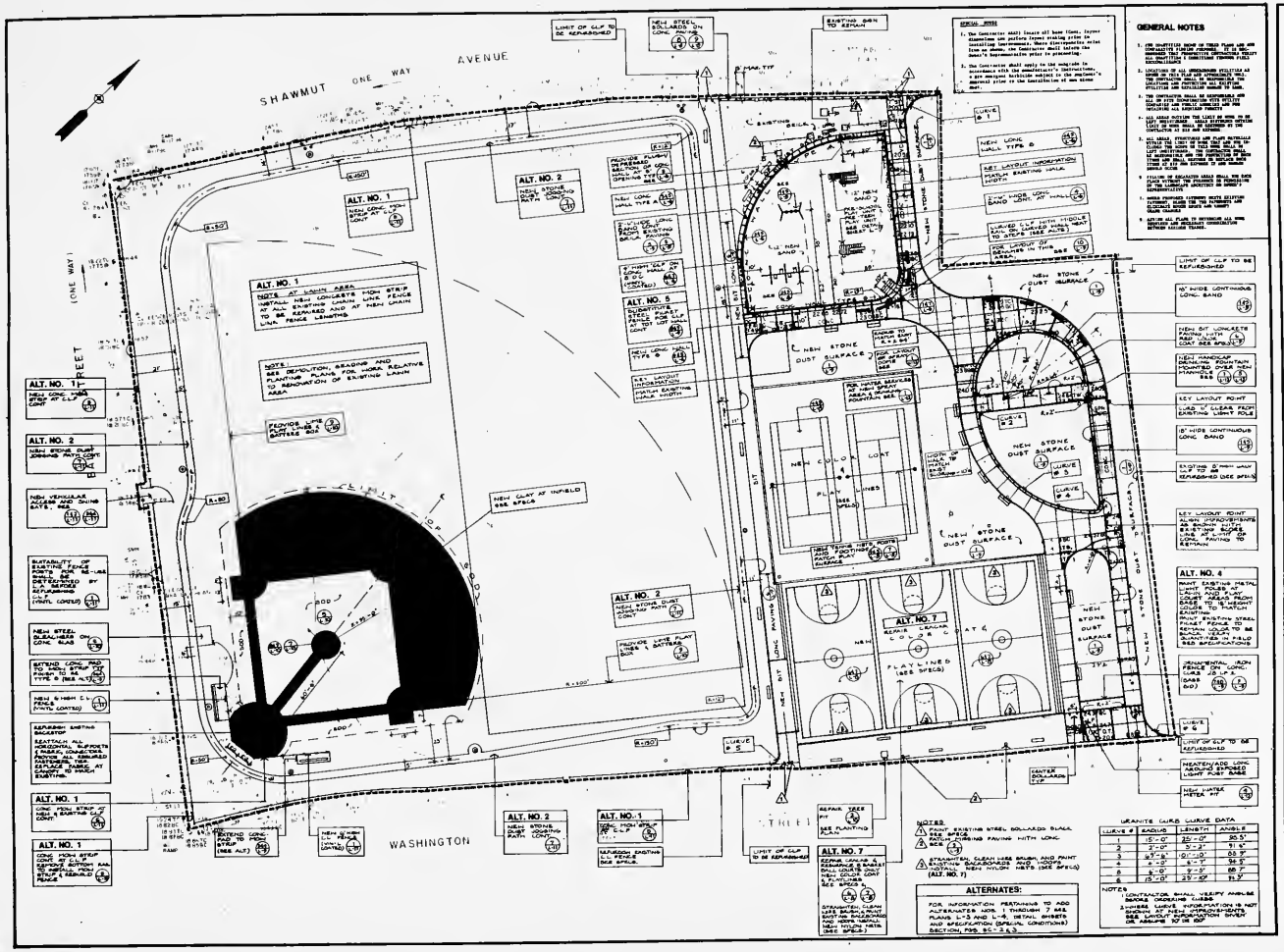
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST. WALTHAM, MA 02154

BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
648 BEACON ST BOSTON,MA 02215

DEMOLITION PLAN

SCALE 1"=30'-0"
DATE SEPT. 26, 1988
DRAWN LAM
CHECKED LCD
APPROVED PL

L-2



GENERAL NOTES

1. THE QUANTITIES SHOWN ON THESE PLANS ARE AND CONSIDERED TO BE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE PROSPECTIVE CONTRACTORS TO ESTIMATE THEMSELVES THE EXTENT OF THE WORK.
2. LOCATIONS OF ALL UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES THAT COULD BE AFFECTED BY THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY OR UTILITIES CAUSED BY OR ATTRIBUTABLE TO HIS OPERATIONS, INCLUDING ALL EXISTING TREES.
4. ALL WORK WITHIN THE CLF BE DONE BY A CLF INSTALLATION. ALSO REFINISHING OFFICE WORK SHALL BE DONE BY A PROFESSIONAL CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
5. ALL SMALL STRUCTURES AND PLANT MATERIALS STAKED TO LOCATE THEM AND ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO CLF INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PLANTS AND STRUCTURES DUE TO HIS OPERATIONS. ALL STRUCTURES AND PLANTS TO BE EXPOSED TO ANY DAMAGE SHALL BE REPAIRED.
6. FILLING OF EXCAVATED AREAS SHALL NOT BEGIN UNTIL THE LANDSCAPE ARCHITECT HAS INSPECTED THE UNDERLAYER AND APPROVED THE REPRESENTATIVE.
7. WORK REQUIRED FOLLOWING WHITE EDITION PAVEMENT MARKS FOR THE PERMANENT PAVEMENT MARKING SHALL BE DONE BY THE YELLOW COLOR.
8. BEFORE ALL PLANS TO DETERMINE ALL WORK REQUIRED AND ESTIMATE THE CONSTRUCTION METHOD BEFORE BIDDING.

NOTES

1. CONTRACTOR SHALL REFINISH ALL NEW STEEL BOLLARDS BLACK.
2. CONTRACTOR SHALL REPAIR PAVING WITH CONC.
3. STRAIGHTEN, CLEAN WIRE BRUSH AND PAINT EXISTING BALLASTRADE AND HOOPS INSTALL NEW NYLON NETS (SEE SPECS) (ALT. NO. 7)

ALTERNATES:

FOR INFORMATION PERTAINING TO ADD ALTERNATES NOS. 1 THROUGH 7 SEE PLANS L-3 AND L-4, DETAIL SHEETS AND SPECIFICATION (SPECIAL CONDITIONS) SECTION, PGS. SC-2 & 3

GRANITE CURB CURVE DATA

CURVE #	RADIUS	ANGLE
1	15'-0"	30.5°
2	15'-0"	91.0°
3	9'-6"	63.9°
4	6'-0"	96.5°
5	6'-0"	88.7°
6	15'-0"	21.3°

NOTES
1. CONTRACTOR SHALL VERIFY ANGLES BEFORE ORDERING CURBS.
2. SHADED CURVE INFORMATION IS NOT SHOWN AT NEW IMPROVEMENTS. SEE LAYOUT SECTION SHEET OR ANGLES TO BE SET

RAMSEY PARK

BOSTON, MASS.

LEGEND

- EXISTING CONC PAVING
- NEW CONC PAVING
- CLAY AT INFIELD
- 8'-0 LEAD C.L. FENCE OPENING
- CONC. PAD EXTENSION AT BENCH DETAIL FRAME SHALL BE TYPE 3
- NEW WOODEN BENCH
- EXISTING GRANITE CURB
- NEW GRANITE CURB
- CLF CHAIN LINK FENCE
- EXISTING CLF
- NEW CLF (VINYL COATED)
- NEW STEEL BOLLARDS
- ALIGNMENT OR PARALLEL ALIGNMENT
- R RADIUS
- ℄ CENTER LINE
- LIMIT OF WORK/LINE
- ALT. ALTERNATE
- EXPANSION JOINT AT NEW CONC PAVING

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES
LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS
134 BEACH ST, BOSTON, MA 02110

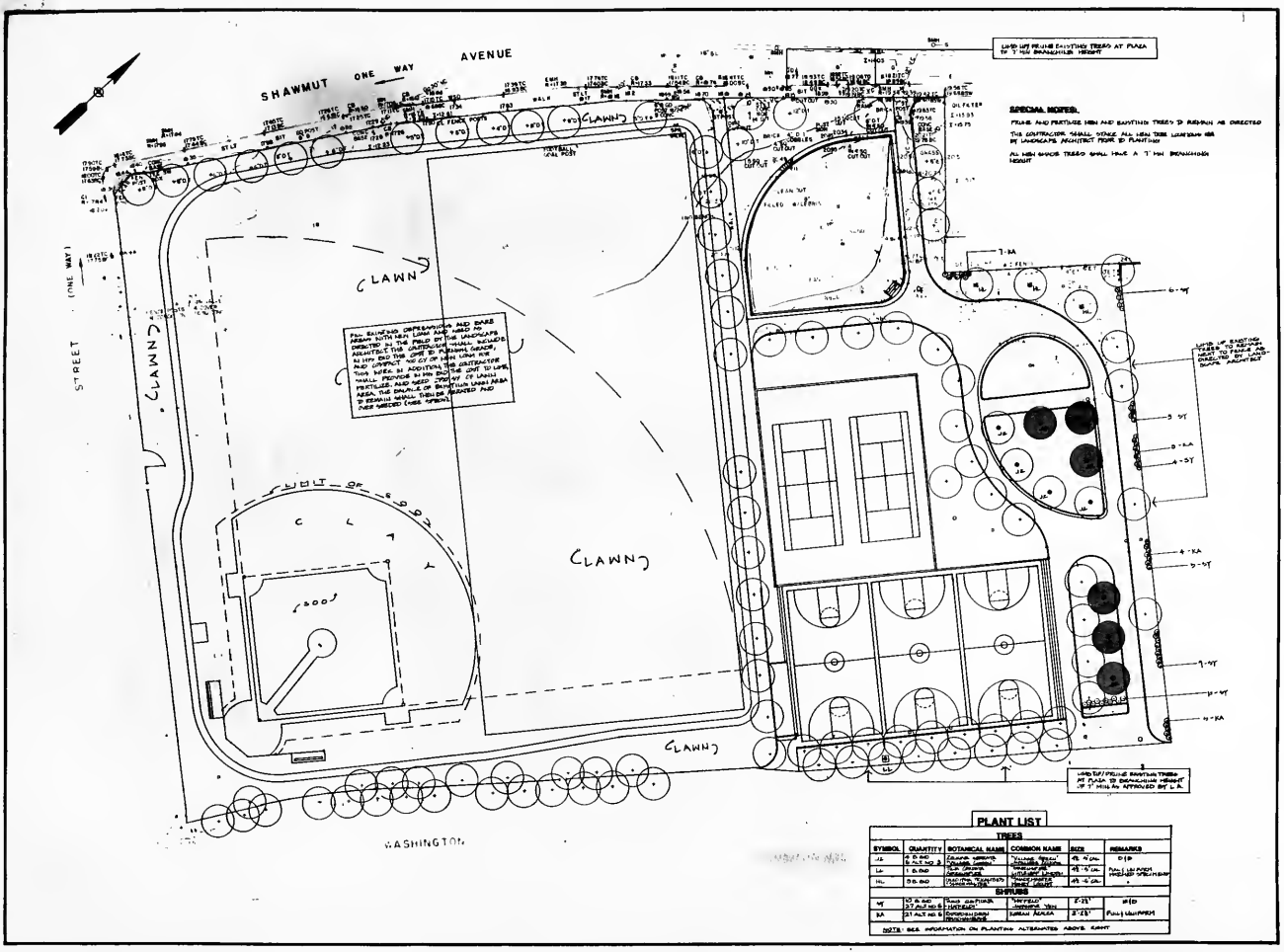
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST, WALTHAM, MA 02154

BRYANT ASSOCIATES, INC.
SURVEY CONSULTANTS
948 BEACON ST.BOSTON,MA 02215

LAYOUT PLAN

SCALE 1"=40'-0"
DATE REVISIONS
DRAWN L.T.W.
CHECKED
APPROVED P.L.

L-2



PLANT LIST

TREES

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
JJ	4 B.&B. 5 ALT NO 3	ZELKOVA SERRATA 'VILLAGE GREEN'	'VILLAGE GREEN' ZELKOVA	4½"-5" CAL	B&B
LJ	1 B.&B.	ULMUS JAPONICA	JAPANESE ELM	4½"-5" CAL	B&B
HL	3 B.&B.	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER'	'SHADEMASTER' HONEYLOCUST	4½"-5" CAL	B&B

SHRUBS

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
WF	12 B.&B. 27 ALT NO 6	ILEX OPACA 'HERMAN'	'HERMAN' HOLLY	5'-6½"	B&B
KA	21 ALT NO 6	KALMIA LATIFOLIA 'MINUSCULA'	DWARF KALMIA	2'-2½"	FULL & WELL BRANCHED

NOTE: SEE INFORMATION ON PLANTING ALTERNATES ABOVE SHEET

RAMSEY PARK

BOSTON, MASS.

LEGEND

- EXISTING TREE TO REMAIN
- NEW DECIDUOUS TREE
- JJ PLANT TYPE SYMBOL
- EXISTING SHRUB & TREE PIT TO BE REMOVED
- NEW SHRUB PLANTING
- ALT ALTERNATE
- D.BO BASE BID

ALTERNATES

ALT. NO. 3

NEW DECIDUOUS TREES - 5JJ

ALT. NO. 6

NEW SHRUB PLANTING - 3X - KA & 27-WF

NOTE: SEE PLANTING LIST FOR KEY TO ALTERNATE PLANTING SELECTIONS. ALT. 3 - SELECT ONE TREE FROM LIST. ALT. 6 - SELECT ONE SHRUB FROM LIST. SEE PLANTING LIST FOR ALTERNATE PLANTING SELECTIONS.

FOR

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LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS
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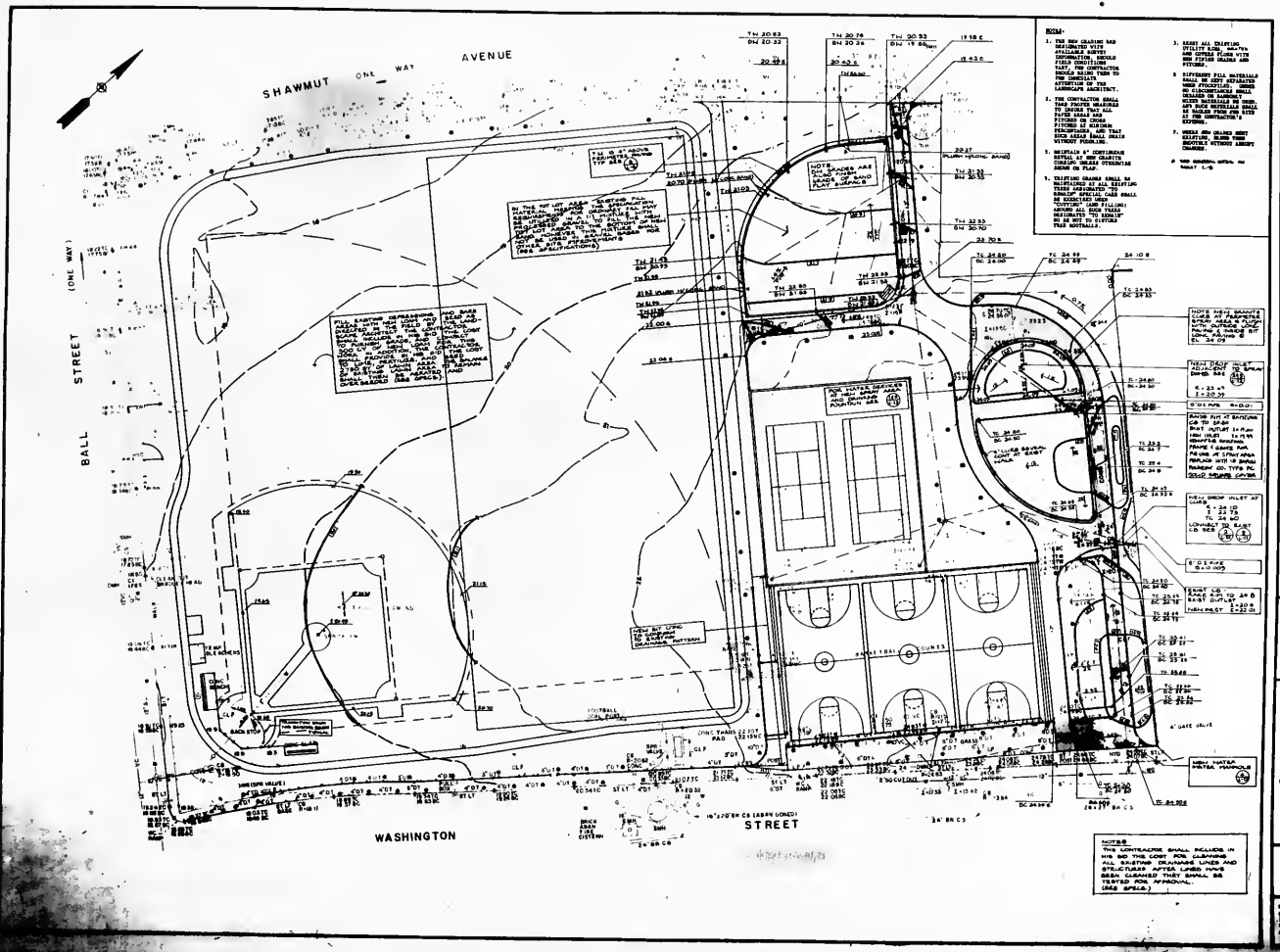
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST, WALTHAM, MA 02154

BRYANT ASSOCIATES, INC.
SURVEY CONSULTANTS
948 BEACON ST.BOSTON,MA 02215

PLANTING PLAN

SCALE 1"=40'-0"
DATE SEPT. 26, 1983
DRAWN J.W.
CHECKED J.W.
APPROVED P.L.

L-4



RAMSEY PARK

BOSTON, MASS.

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION TO REMAIN
- HP HIGH POINT
- TC TOP OF CURB
- BC BOTTOM OF CURB
- EL ELEVATION
- INVERT ELEVATION
- EXISTING CURB
- NEW GRANITE CURB
- EXISTING CATCH BASIN & DRAINAGE GRATE ALL SHALL BE CLEANED AND STANDARD HOLDER SPECIFICATION 2.09
- NEW DROP INLET & CATCH BASIN STREET DRAINLINE
- NEW GRANING FOUNTAIN
- NEW LONG PAVING
- LIMIT OF INSTALLATION
- PLANT HEDGING AT CONC. WALL LINE

NOTE: FOR OTHER SYMBOLS & ABBREVIATIONS SEE EXISTING CONDITIONS LEGEND

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES

LANDSCAPE ARCHITECTS, URBAN DESIGNERS, PLANNERS
134 BEACH ST, BOSTON, MA 02110

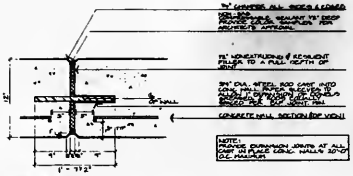
KEYES ASSOCIATES

CONSULTING ENGINEERS
ONE MIDDLEY ST, WALTHAM, MA 02154

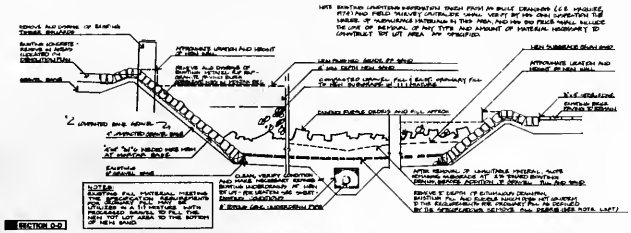
BRYANT ASSOCIATES, INC.

SURVEY CONSULTANTS
242 CHARLES ST, BOSTON, MA 02114

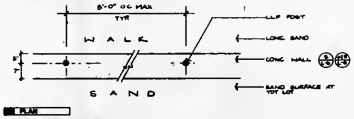
GRADING & DRAINAGE PLAN



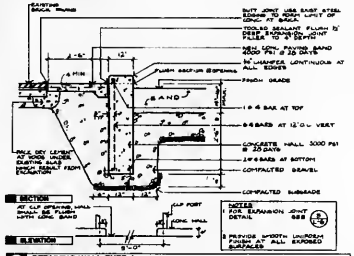
5 EXPANSION JOINT (AT CONC. WALLS)
N.T.S.



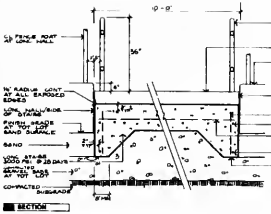
2 EXISTING CONDITIONS & DEMOLITION DETAIL FOR NEW TOT LOT AREA
SCALE: 1/8" = 1'-0"

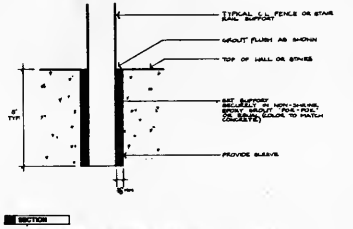


6 CL FENCE AT TOT LOT
SCALE 3/4" = 1'-0"

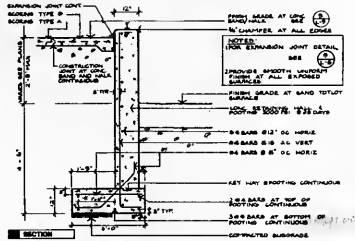


3 RETAINING WALL TYPE A
SCALE 3/4" = 1'

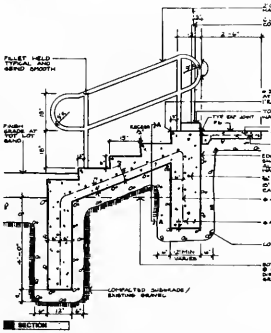




7 C.L.F. & STEEL PIPE HANDRAIL MOUNTING IN CONC. STRUCTURE
SCALE: 1/8" = 1'



4 RETAINING WALL TYPE B
SCALE: 1/4" = 1'-0"



1 STEPS AT TOT LOT
SCALE: 3/4" = 1'

RAMSEY PARK

BOSTON MASS

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C.K. LU & ASSOCIATES
LANDSCAPE ARCHITECTS
URBAN DESIGNERS PLANNERS
134 BEACH ST BOSTON MA 02110

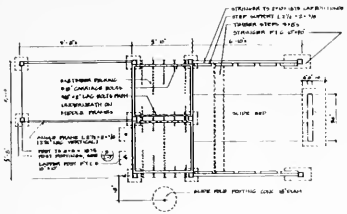
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST WALTHAM MA 02154

BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
648 BEACON ST BOSTON MA 02215

DETAILS

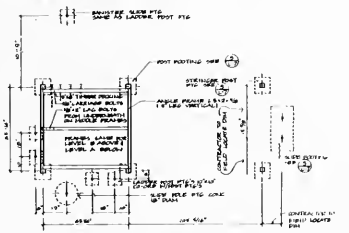
SCALE —
DATE SEPT 20, 1989
DRAWN L. Lee
CHECKED K.C.
APPROVED P.L.

L-6



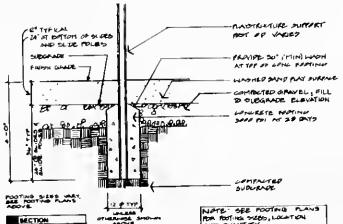
PLAN

3 FRAMING & FOOTING PLAN - PRE-SCHOOL PLAY UNIT WE #2873
N.T.S.



PLAN

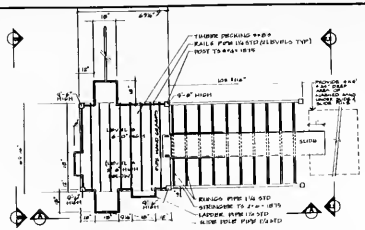
4 FRAMING & FOOTING PLAN - PRE-TEEN PLAY UNIT WE #2508
N.T.S.



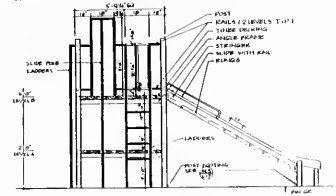
SECTION

5 CONCRETE FOOTING DETAIL FOR PLAY STRUCTURES
N.T.S.

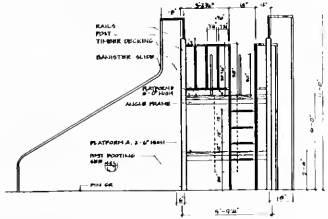
NOTE: SEE FOOTING PLANS FOR FOOTING SIZES, LOCATION AND QUANTITY



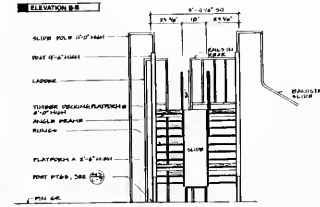
PLAN



ELEVATION A-A



ELEVATION B-B

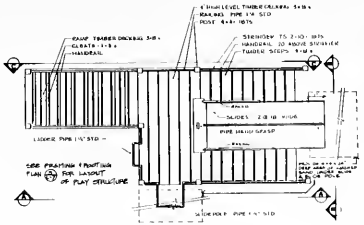


ELEVATION C-C

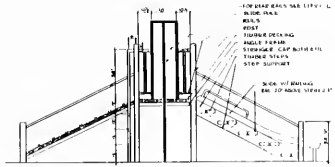
GENERAL NOTES

1. PLAY STRUCTURES TO BE UNITS WE #2508 AND WE #2873 MANUFACTURED BY:
   WOOD EXPERIENCE, INC
   1600 CENTERVIEW AVENUE
   SPRING LAKE HEIGHTS,
   PEN TOWN, 11982
   (516) 223-1500
   OR APPROVED EQUALS.
2. CONTRACTOR TO ASSEMBLE PLAY STRUCTURAL KIT AS PER MANUFACTURER'S INSTRUCTIONS. SEE SPECIFICATIONS
3. FOR ADDITIONAL DETAILS SECTIONS 9A & 9B, SECTION 9C, SECTION 9-D - PLAY-GROUND EQUIPMENT.
4. PROVIDE 4"x4"x24" DEEP SAND POCKETS AT ENDS OF SLIDES AND UNDER SLIDE POLE AND BANISTER SLIDE.

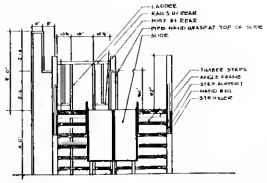
2 PRE-TEEN PLAY UNIT WE# 2508 DETAILS
N.T.S.



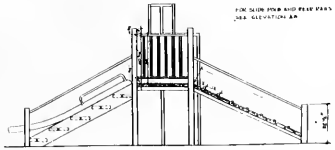
PLAN



ELEVATION A-A



ELEVATION B-B



ELEVATION C-C

1 PRE-SCHOOL PLAY UNIT WE #2873 DETAILS
N.T.S.

RAMSEY PARK

BOSTON MASS

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C K LU & ASSOCIATES
LANDSCAPE ARCHITECTS
URBAN DESIGNERS PLANNERS
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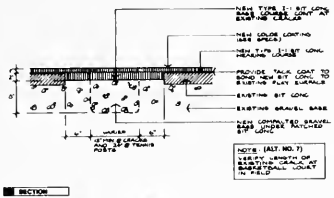
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST WALTHAM MA 02154

BRYANT ASSOCIATES INC
SURVEY CONSULTANTS
648 BEACON ST BOSTON MA 02215

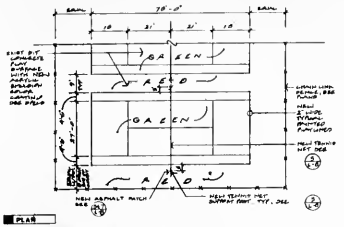
DETAILS

SCALE —
DATE SEPT 20, 1989
DRAWN P.G.
CHECKED C.K.
APPROVED PL

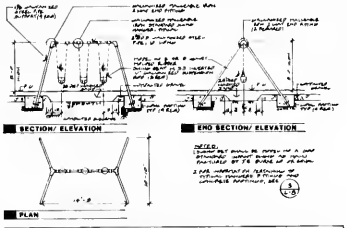
L-7



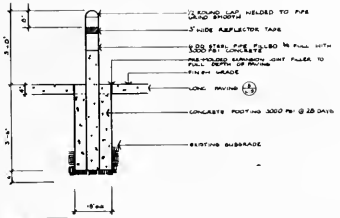
7 BIT. CONC. PLAY SURFACE REPAIR
SCALE: 1 1/2" = 1'-0"



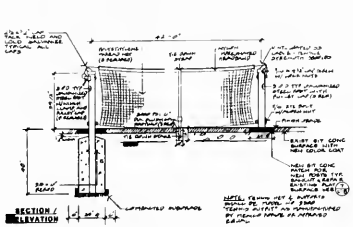
4 NEW TENNIS COURT, TYPICAL
SCALE: 1/16 = 1-0



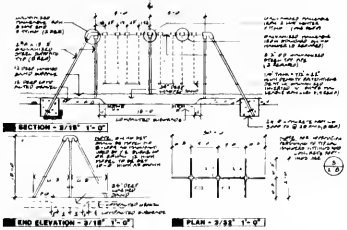
1 SWING SET - TODDLER UNIT
SCALE: 3/16" 1'-0"



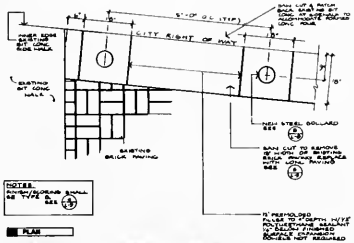
8 STEEL BOLLARDS
SCALE: 3/4" = 1'-0"



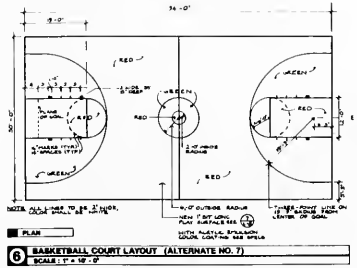
5 TENNIS NET & SUPPORT POSTS
N.T.S.



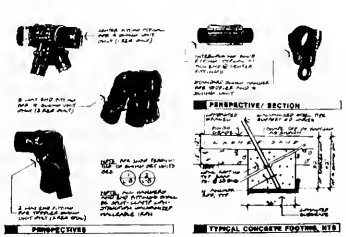
2 SWING SET - 4 SWING UNIT
SCALE: AS SHOWN



9 STEEL BOLLARDS @ SHAWMUT AVE. ENTRANCE
SCALE: 1" = 1'-0"



6 BASKETBALL COURT LAYOUT (ALTERNATE NO. 7)
SCALE: 1" = 10'-0"



3 FITTINGS & FOOTINGS FOR TODDLER & 4 UNIT SWING
NTS

RAMSEY PARK

BOSTON MASS

FOR

BOSTON PARKS AND RECREATION DEPARTMENT

PAUL C K LU & ASSOCIATES
LANDSCAPE ARCHITECTS
URBAN DESIGNERS PLANNERS
134 BEACH ST BOSTON MA 02110

KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST WALTHAM MA 02154

BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
448 BEACON ST BOSTON MA 02215

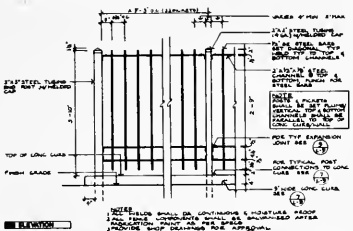
DETAILS

SCALE —
DATE SEPT 26, 1988
DRAWN T. HUI
CHECKED S.K.
APPROVED P.L.

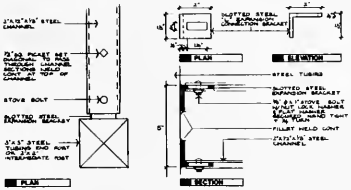
L-8

PICKET FENCE LOCATIONS

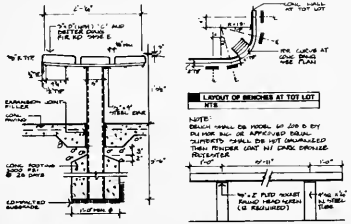
1 STEEL PICKET FENCE @ ENTRY AREA CONC. CURB - BASE BID
2 STEEL PICKET FENCE @ TOT LOT WALL - ALTERNATE NO 5
3 STEEL PICKET FENCE @ TOP OF CONC. RETAINING WALL
SECTIONS AT ALL VARIED SECTIONS OF TOT LOT WALL FENCE VARIANCE AS CALLED FOR ON DETAIL 3 ON SHEET L-9 (BASE PLANS)



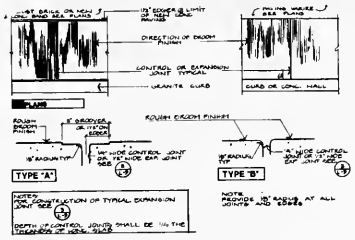
8 STEEL PICKET FENCE (TO MATCH EXISTING) (ALT. NO. 5 @ TOT LOT WALL)
SCALE: 1" = 1'-0"



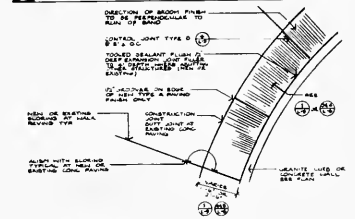
9 EXPANSION CONNECTION AT FENCE POSTS
SCALE: 1/2" = 1"



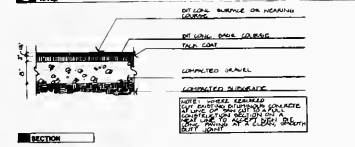
10 BENCHES
SCALE: 1 1/2" = 1'-0"



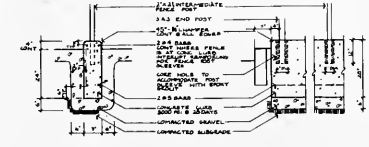
4 TYPICAL CONC. PAVING FINISHES
N.T.S.



5 CONCRETE BAND FINISH
N.T.S.

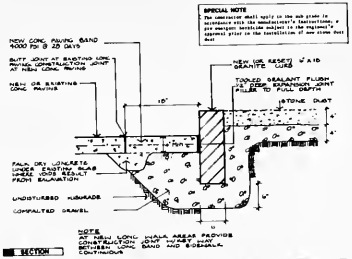


6 BITUMINOUS CONCRETE
N.T.S.

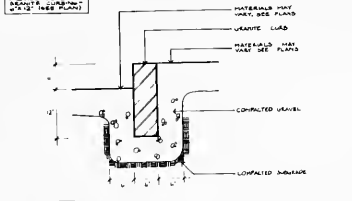


7 CONCRETE CURB AT ENTRANCE FENCE
SCALE: 3/4" = 1'

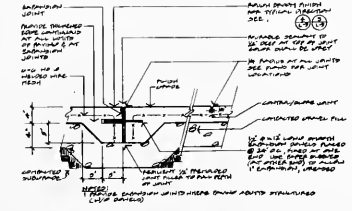
SPECIAL NOTE
The requirements shall apply to the sub grade in accordance with the manufacturer's instructions, or per designer tolerance subject to the engineer's approval prior to the installation of any stone dust deck



1 GRANITE CURB WITH CONC. PAVING BAND & STONEDUST SURFACING
SCALE: 1 1/2" = 1'-0"



2 GRANITE CURB
SCALE: 1 1/2" = 1'-0"



3 CONCRETE PAVING
SCALE: 1-1/2" 1'-0"

BOSTONIA CONSTITUTIONAL LODGE NO. 20

RAMSEY PARK

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FOR

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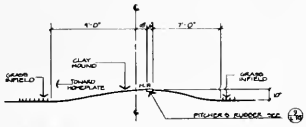
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST WALTHAM MA 02154

BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
648 BEACON ST BOSTON MA 02215

DETAILS

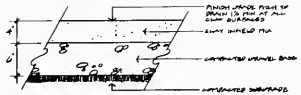
SCALE
DATE SEPT 26, 1983
DRAWN L. LUE
CHECKED LK
APPROVED PL

L-9



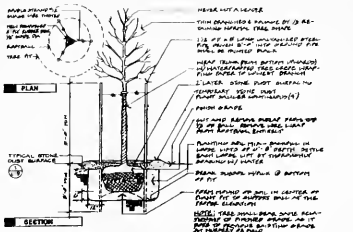
ELEVATION

7 BASEBALL PITCHER'S MOUND
N.T.S.

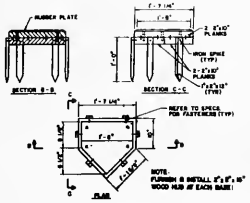


SECTION

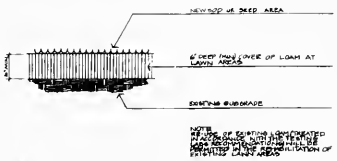
4 CLAY INFIELD MIX
SCALE: N.T.S.



1 TREE PLANTING
SCALE: 1/4"=1'-0"

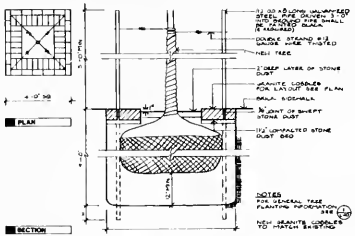


6 BASEBALL HOME PLATE
N.T.S.

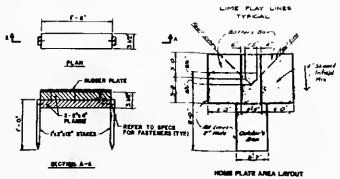


SECTION

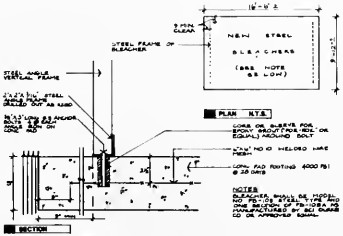
5 LOAM AT SEED AND SOD AREAS
SCALE: 1/4" = 1'0"



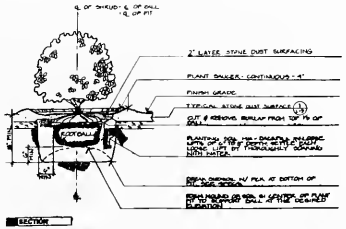
2 TREE PLANTING AT COBBLE PITS



9 PITCHER'S PLATE
N.T.S.



6 CONC. PAD FOOTING FOR BLEACHERS
SCALE: 6" = 1'-0"



3 SHRUB PLANTING
SCALE: 1/2"=1'-0"

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BOSTON MASS

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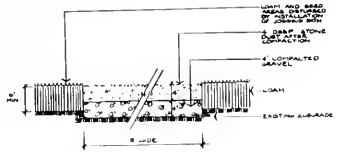
CONSULTING ENGINEERS
ONE MOODY ST WALTHAM MA 02154

BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
648 BEACON ST BOSTON MA 02215

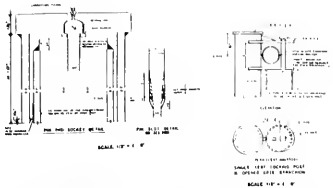
DETAILS

SCALE —
DATE SEPT. 20, 1986
DRAWN L. HO
CHECKED L.C.
APPROVED P.L.

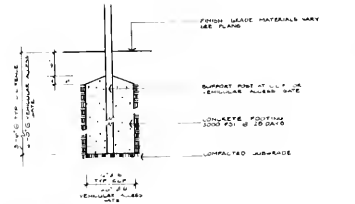
L-10



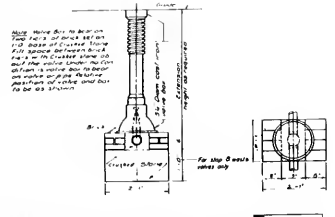
7 STONE DUST JOGGING PATH (ALTERNATE NO. 2)
SCALE 1 1/2" = 1' 0"



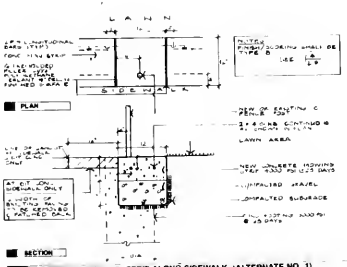
4 VEHICULAR GATE DETAILS



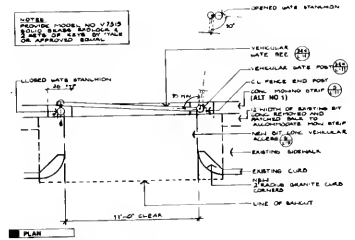
1 TYP. CONC. FOOTING W/OUT MOW STRIP (BASE BID)
SCALE 1 1/2" = 1' - 0"



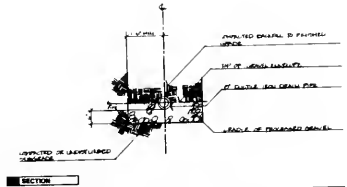
8 VALVE BOX SETTING (STOP AND WASTE)
NOT TO SCALE



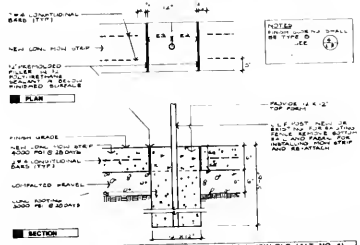
5 CONCRETE MOWING STRIP ALONG SIDEWALK (ALTERNATE NO. 1)
SCALE 1 1/2" = 1' - 0"



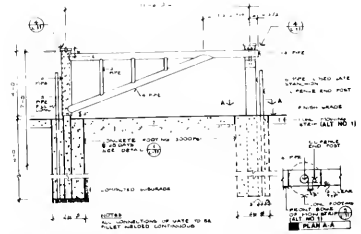
2 VEHICULAR ACCESS
SCALE 3/8" = 1' - 0"



9 STORM DRAIN - IRON PIPE TRENCH
NOT TO SCALE



6 CONC. MOW. STRIP & CLF FOOTING @ BACKSTOP & NEW CLF (ALT. NO. 1)
SCALE 1 1/2" = 1' - 0"



3 SINGLE LEAF VEHICULAR GATE
SCALE 1 1/2" = 1' 0"

RAMSEY PARK

BOSTON MASS

FOR

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119 BEACON ST BOSTON MA 02110

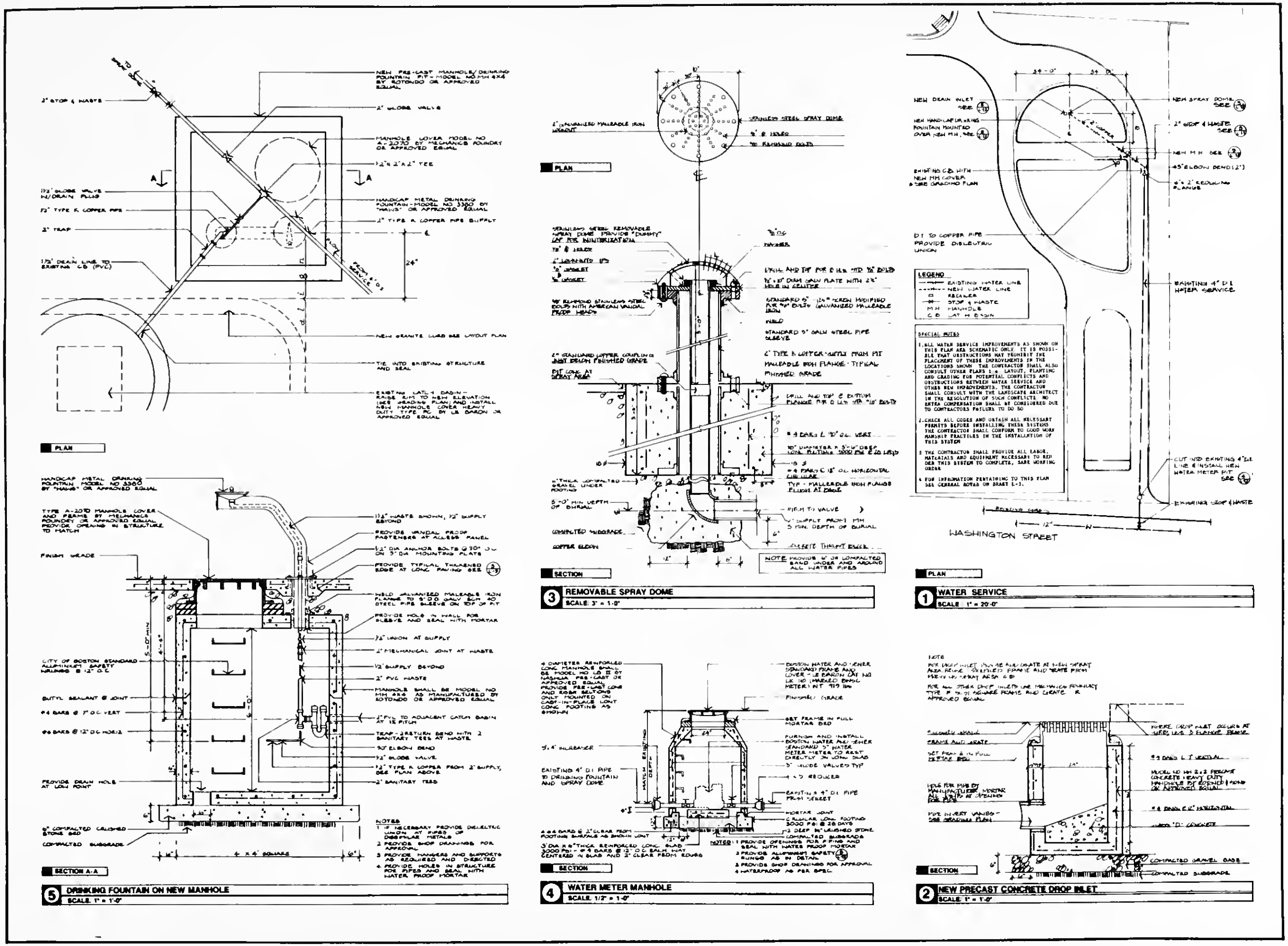
KEYES ASSOCIATES
CONSULTING ENGINEERS
ONE MOODY ST. WALTHAM MA 02154

BRYANT ASSOCIATES INC
SURVEY CONSULTANTS
148 BEACON ST BOSTON MA 02215

DETAILS

SCALE
DATE SEPT. 20, 1990
DRAWN LWD
CHECKED LJB
APPROVED PCL

L-11



RAMSEY PARK

BOSTON MASS

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URBAN DESIGNERS PLANNERS
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BRYANT ASSOCIATES, INC
SURVEY CONSULTANTS
948 BEACON ST BOSTON MA 02215

DETAILS

L-12

CITY OF CAMBRIDGE, MASSACHUSETTS

RAYMOND STREET TOT LOT

MAYOR

WALTER J SULLIVAN

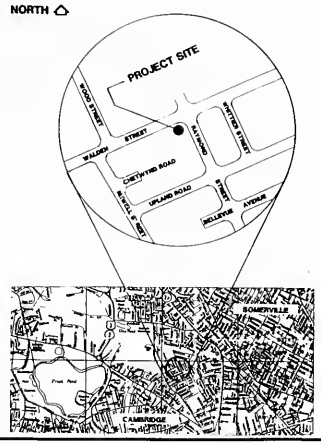
CITY MANAGER

ROBERT W. HEALY

CITY COUNCIL

THOMAS DANEHY
FRANCIS DUEHAY
SAUNDRA GRAHAM
SHEILA RUSSELL
DAVID SULLIVAN
ALFRED VELLUCCI
WILLIAM WALSH
ALICE WOLF

PROJECT LOCATION
NORTH



MARCH 1987

LIST OF DRAWINGS

L-1 EXISTING CONDITIONS & DEMOLITION

L-2 SITE LAYOUT & PLANTING

L-3 GRADING

L-4 SITE DETAILS

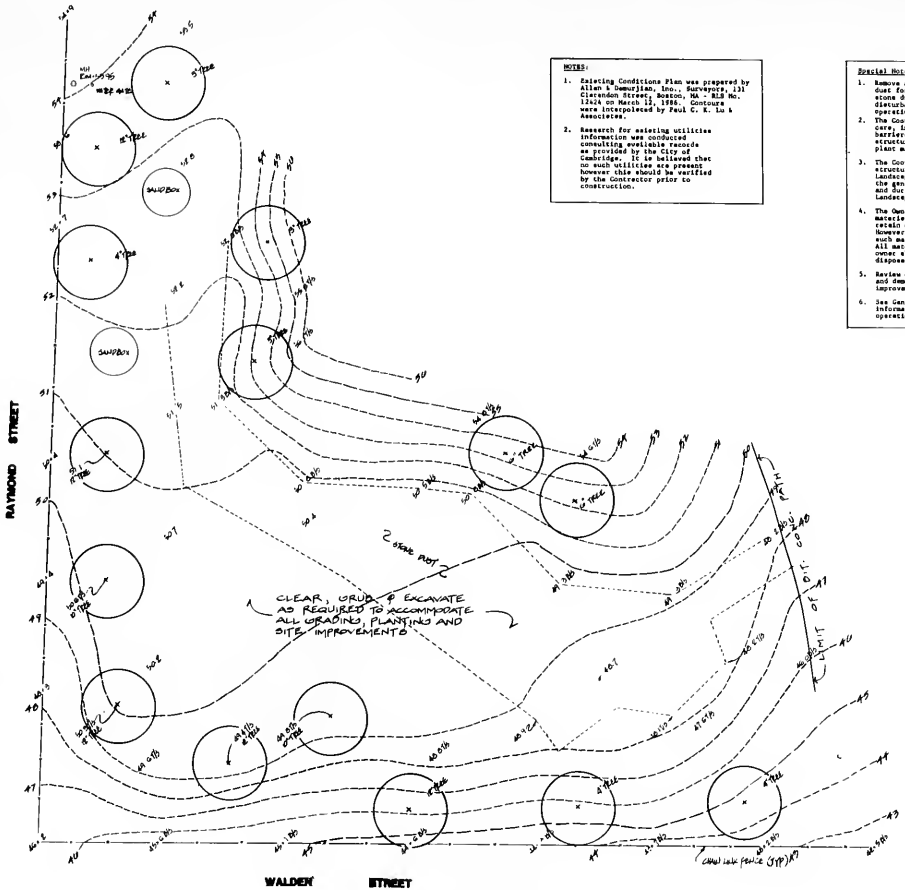
L-5 SITE DETAILS

L-6 SITE DETAILS

L-7 SITE DETAILS - ALTERNATES

PAUL C. K. LU & ASSOCIATES ◇ LANDSCAPE ARCHITECTS ◇ BELMONT, MASSACHUSETTS

ALLEN & DEMURJIAN, INC. ◇ SURVEY CONSULTANTS ◇ BOSTON, MASSACHUSETTS



NOTES:

1. Existing Conditions Plan was prepared by Allen & Demurjian, Inc., Surveyors, 131 Clarendon Street, Boston, MA - ALS No. 12424 on March 12, 1986. Contours were interpolated by Paul C. K. Lu & Associates.

2. Research for existing utilities information was conducted consulting available records as provided by the City of Cambridge. It is believed that no such utilities are present however this should be verified by the Contractor prior to construction.

Special Notes:

1. Remove and stockpile existing stone dust for re-use at areas of existing stone dust path to remain where disturbed during construction operations.
2. The Contractor shall provide sufficient care, including the erection of protective barriers, during demolition around existing structures, construction materials and plant materials "To Remain."
3. The Contractor shall erect temporary walks, structures, or fences as directed by the Landscape Architect for the protection of the general public and others at excavations and during construction operations as the Landscape Architect deems appropriate.
4. The Owner reserves the right to review all materials designated for removal and to retain ownership of such materials. However, the Owner shall arrange to have such materials removed from the site. All materials not retained by the owner shall be removed, hauled and disposed of in a legal manner.
5. Review other drawings to determine excavation and demolition required to receive all site improvements.
6. See General Notes on Sheet L-2 for other information pertaining to demolition operations.

NOTE

1 ALL ELEVATIONS REFER TO CITY OF CAMBRIDGE DATUM & CONTOURING TO BE DONE BY PAUL C.K. LU & ASSOC

LAWRENCE C ALLEN - PLS 31224

RAYMOND STREET TOT LOT

PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

LEGEND

- EXISTING TREE TO REMAIN
- 34.0 EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- TO TOP OF SLOPE
- BO BOTTOM OF SLOPE
- EXISTING CHAIN LINK FENCE
- LIMIT OF EXISTING STONE DUST PATH
- O MH EXISTING MANHOLE

PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
88 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CLARENDON STREET
BOSTON, MASSACHUSETTS, 02117

EXISTING CONDITIONS & DEMOLITION

REVISION	SCALE 1" 10'-0"
	DATE MARCH 1, 1987
	DRAWN CW
	CHECKED CB
	APPROVED PL

L-1

SPECIAL NOTES

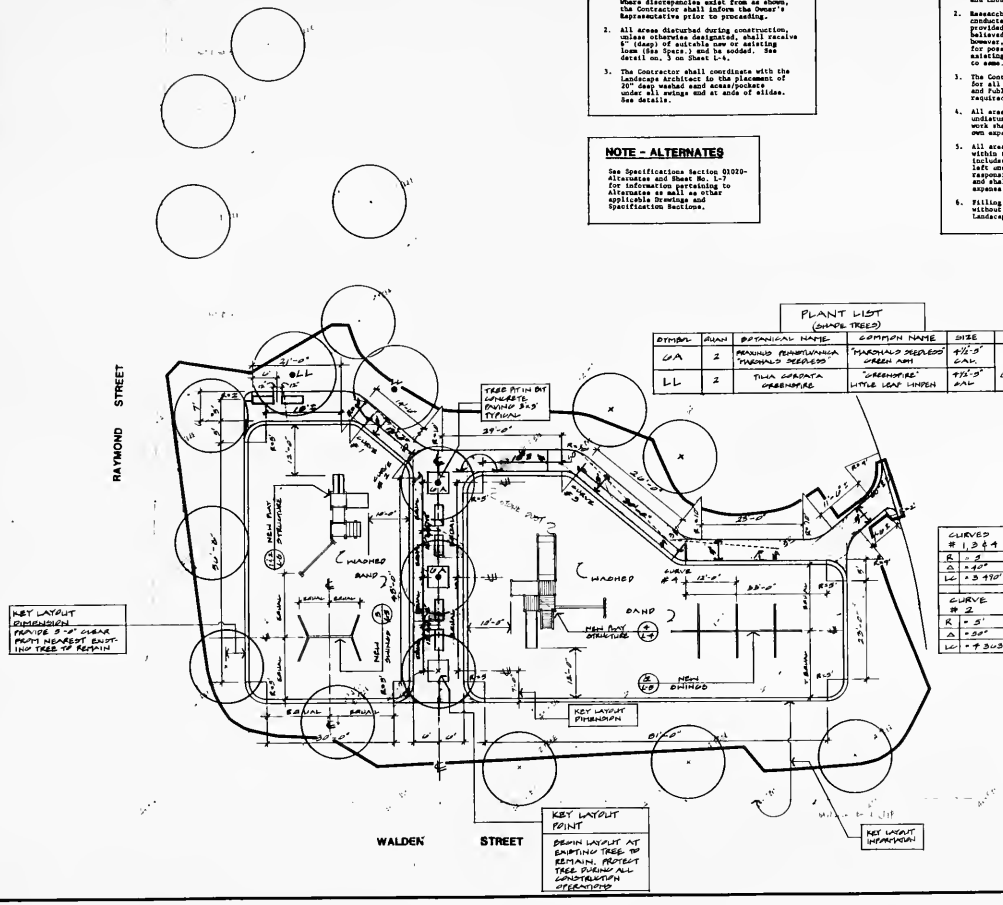
1. The Contractor shall locate all base lines, layout dimensions and perform layout staking prior to installing improvements. Where discrepancies exist from as shown, the Contractor shall inform the Owner's Representative prior to proceeding.
2. All areas disturbed during construction, unless otherwise designated, shall receive 6" (deep) of suitable new or existing loam (See Specs.) and be sodded. See detail on. 3 on Sheet L-4.
3. The Contractor shall coordinate with the Landscape Architect in the placement of 20" deep washed sand areas/pockets under all swings end at ends of slides. See details.

NOTE - ALTERNATES

See Specifications Section 01020-Alternates and Sheet No. L-7 for information pertaining to Alternates as well as other applicable Drawings and Specification Sections.

GENERAL NOTES:

1. The quantities shown on these plans are for comparative bidding purposes. It is recommended that prospective contractors verify all quantities and conditions through field reconnaissance.
2. Research for existing utility information was conducted consulting available records as provided by the City of Cambridge. It is believed that no such utilities exist, however, the Contractor shall be responsible for possible utility locations, protecting existing utilities and repairing damages to same.
3. The Contractor shall be responsible if required for all site coordination with Utility Companies and Public Agencies and for obtaining all required permits.
4. All areas outside the limit of work shall be left undisturbed. Areas disturbed outside limit of work shall be restored by the Contractor at his own expense.
5. All areas, structures and plant materials within the limit of work that are not included in the scope of this work shall be left undisturbed. The Contractor shall be responsible for the protection of such items and shall replace such items at his own expense if any damage should occur.
6. Filling of excavated areas shall not take place without the presence or permission of the Landscape Architect or Owner's Representative.



PLANT LIST
(SHADE TREES)

SYMBOL	QUAN	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
GA	2	FRAXINUS PENNSYLVANICA 'MARSHALL SEEDLESS'	'MARSHALL SEEDLESS' GREEN ASH	4½"-3" CAL.	B & B FULL & UNIFORM
LL	2	TILIA CORDATA GREENSPIRE	'GREENSPIRE' LITTLE LEAF LINDEN	4½"-3" CAL.	6'-0" MIN BRANCHING HEIGHT

NOTE

[illegible]

[illegible] ANDREW C. ALLEN [illegible]

RAYMOND STREET
TOT LOT
PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

LEGEND

- EXISTING TREE TO REMAIN
- NEW SHADE TREE IN PAVED AREA (2/L-7) (3/L-7)
- NEW SHADE TREE IN LAWN AREA (2/L-7)
- NEW CONCRETE CURB (2/L-4)
- AREA OF NEW BIT CONC PAVING (1/L-4)
- R RADIUS
- Δ DELTA ANGLE
- LC LENGTH OF CURVE
- ℄ CENTER LINE
- ALIGNMENT
- PARALLEL ALIGNMENT
- (3/L-5) DETAIL KEY
- LIMIT OF WORK LINE
- NEW CONCRETE BENCH (1/L-7)

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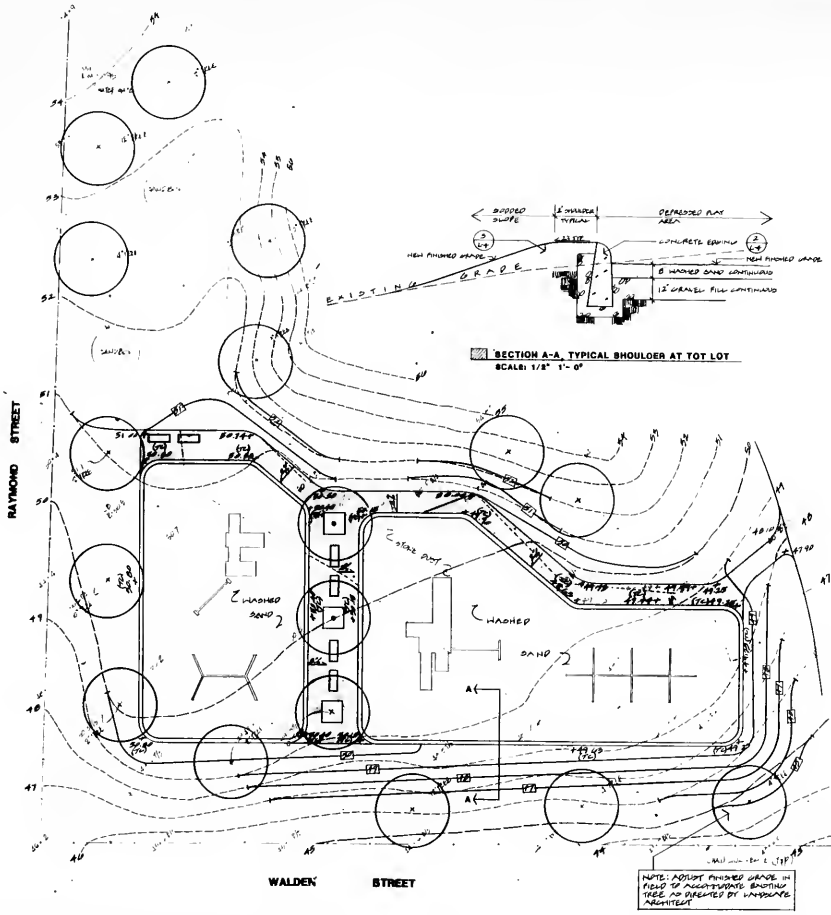
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
69 THAFLO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CLARENDON STREET
BOSTON, MASSACHUSETTS, 02117

SITE LAYOUT & PLANTING

REVISION	SCALE 1"=10'-0" DATE [illegible] DRAWN [illegible] CHECKED [illegible] APPROVED [illegible]

L-2



SECTION A-A, TYPICAL SHOULDER AT TOT LOT
SCALE: 1/2" 1'-0"

NOTE: ADJUST FINISHED GRADE IN FIELD TO ACCOMMODATE EXISTING TREE AS DIRECTED BY LANDSCAPE ARCHITECT

SPECIAL NOTES:

1. The new grading was designated with available survey information, should field conditions vary, the Contractor should bring them to the immediate attention of the Landscape Architect.
2. Where new grades meet existing, blend them smoothly without abrupt changes.
3. The Contractor shall take proper measures to insure that all paved areas are pitched or cross pitched at 2% min. and that such areas shall drain without ponding.
4. Where proposed pavement meets existing pavement, blend the two pavements and eliminate rough spots and abrupt grade changes.
5. Existing grades shall be maintained at all existing trees designated "To Remain". Special care shall be exercised when "Cutting" (and filling) around all such trees designated "To Remain" so as not to disturb tree rootballs.
6. Strip and stockpile existing loam for reuse (pending Testing Lab reports). Sufficient care shall be exercised to avoid mixing existing topsoil with existing stone dust.
7. Different fill materials shall be kept separated when stockpiled. Under no circumstances shall debased or randomly mixed materials be used. Any such materials shall be hauled from the site at the Contractors expense.

NOTE

[illegible]

[illegible] ALLEN & DEMURJIAN

RAYMOND STREET TOT LOT

PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

LEGEND

47.90	EXISTING SPOT GRADE
----	EXISTING CONTOUR
47.90	NEW SPOT GRADE
----	NEW CONTOUR
(TC)	TOP OF CURB

PAUL C. K. LU & ASSOCIATES
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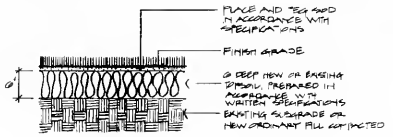
LANDSCAPE ARCHITECTS
88 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
181 CLARENDON STREET
BOSTON, MASSACHUSETTS, 02117

GRADING

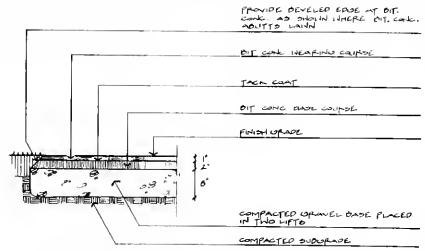
REVISION	SCALE 1" 10'-0"
	DATE [illegible]
	DRAWN [illegible]
	CHECKED [illegible]
	APPROVED [illegible]

L-3



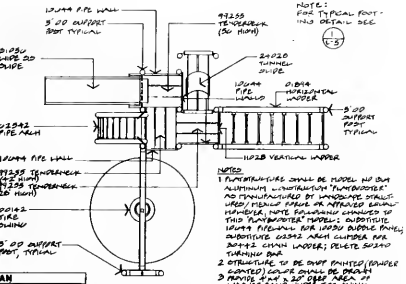
SECTION

3 SOD DETAIL
1-1/2" = 1'-0"



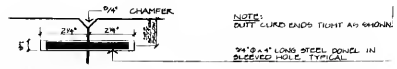
SECTION

1 BIT. CONC. WALK
SCALE: 1" = 1'-0"

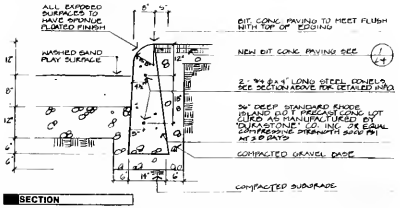


PLAN

4 METAL PLAY STRUCTURE
1/4" = 1'-0"



LONGITUDINAL SECTION



SECTION

2 CONC. EDGING AT TOT LOT
N.T.S.

RAYMOND STREET
TOT LOT
PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

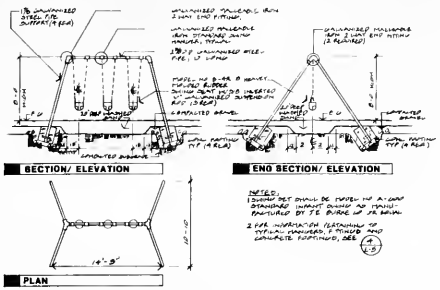
PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
60 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CLARENDON STREET
BOSTON, MASSACHUSETTS, 02117

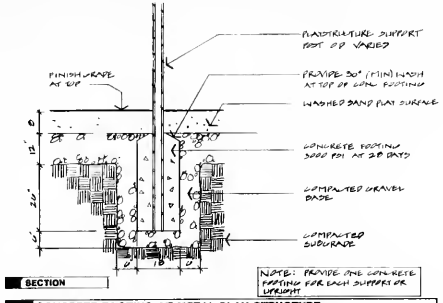
SITE DETAILS

REVISION	SCALE AS SHOWN DATE MARCH, 1987 DRAWN B.H. CHECKED C.D. APPROVED P.C.L.

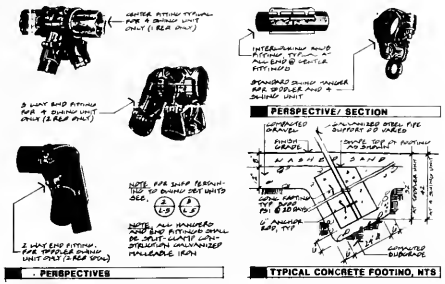
L-4



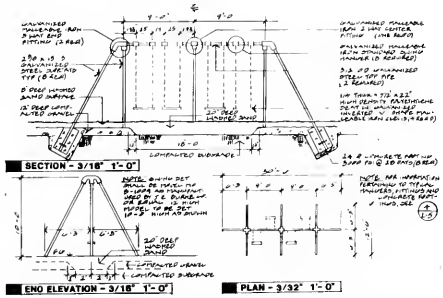
3 SWING SET - TODDLER UNIT
SCALE: 3/16" 1'-0"



1 CONCRETE FOOTING AT METAL PLAY STRUCTURE
SCALE: 3/4" 1'-0"



4 FITTINGS & FOOTINGS FOR TODDLER & 4 UNIT SWING
NTS



2 SWING SET - 4 SWING UNIT
SCALE: AS SHOWN

RAYMOND STREET
TOT LOT
PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

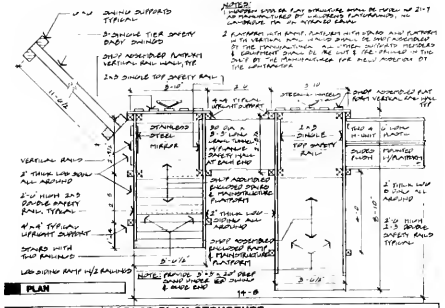
PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
68 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CLARENDON STREET
BOSTON MASSACHUSETTS 02117

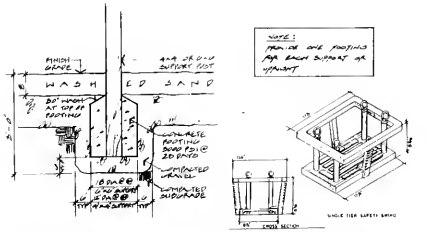
SITE DETAILS

REVISION	SCALE AS SHOWN DATE SEPTEMBER 1, 1987 DRAWN D.P. CHECKED C.D. APPROVED P.L.

L-5



1 WOODEN, TODDLER PLAY STRUCTURE
PLAN SCALE: 1/2" 1'- 0"



2 CONC. FOOTING & SWING SEAT (AT WOODEN TODDLER PLAYSTRUCTURE)
NTS

RAYMOND STREET
TOT LOT
PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

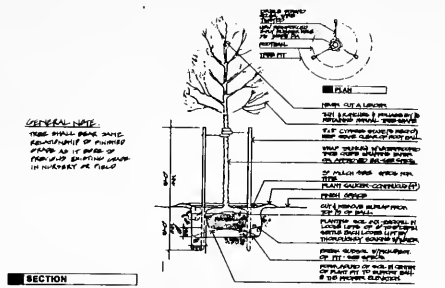
PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
55 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CAMBRIDGE STREET
BOSTON, MASSACHUSETTS, 02117

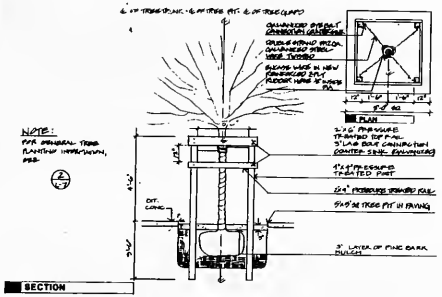
SITE DETAILS

REVISION	SCALE AS SHOWN DATE MARCH 1, 1987 DRAWN B.H. CHECKED C.D. APPROVED P.L.

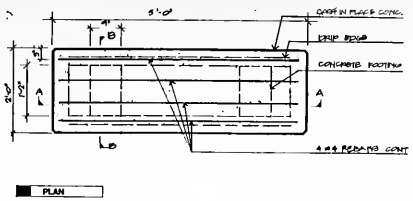
L-6

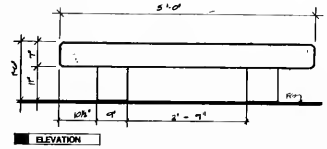


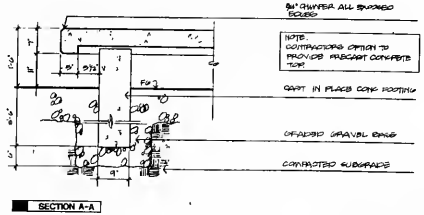
2 TYPICAL TREE PLANTING - ALTERNATE NO. 2
SCALE: NTS

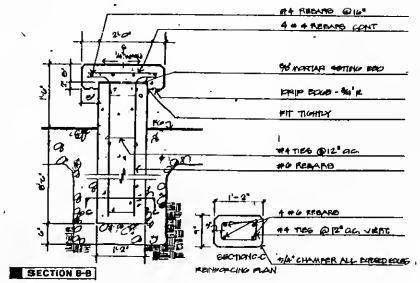


3 TREE PLANTING IN PAVED AREA - ALTERNATE NO. 2
SCALE: NTS









1 CONCRETE BENCH - ALTERNATE NO. 1
SCALE: 1"=1'-0"

RAYMOND STREET
TOT LOT
PUBLIC WORKS DEPARTMENT
CITY OF CAMBRIDGE

PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
59 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02178

ALLEN & DEMURJIAN INC.
SURVEYORS
131 CLARENDON STREET
BOSTON, MASSACHUSETTS 02117

SITE DETAILS - ALTERNATES

REVISION	SCALE AS SHOWN DATE August 1, 1987 DRAWN D.H. CHECKED C.D. APPROVED P.L.

L-7

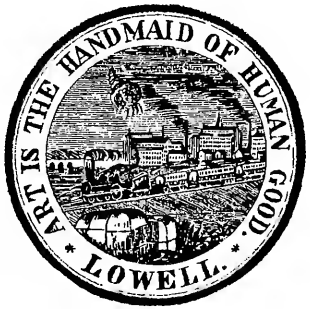
SOUTH COMMON

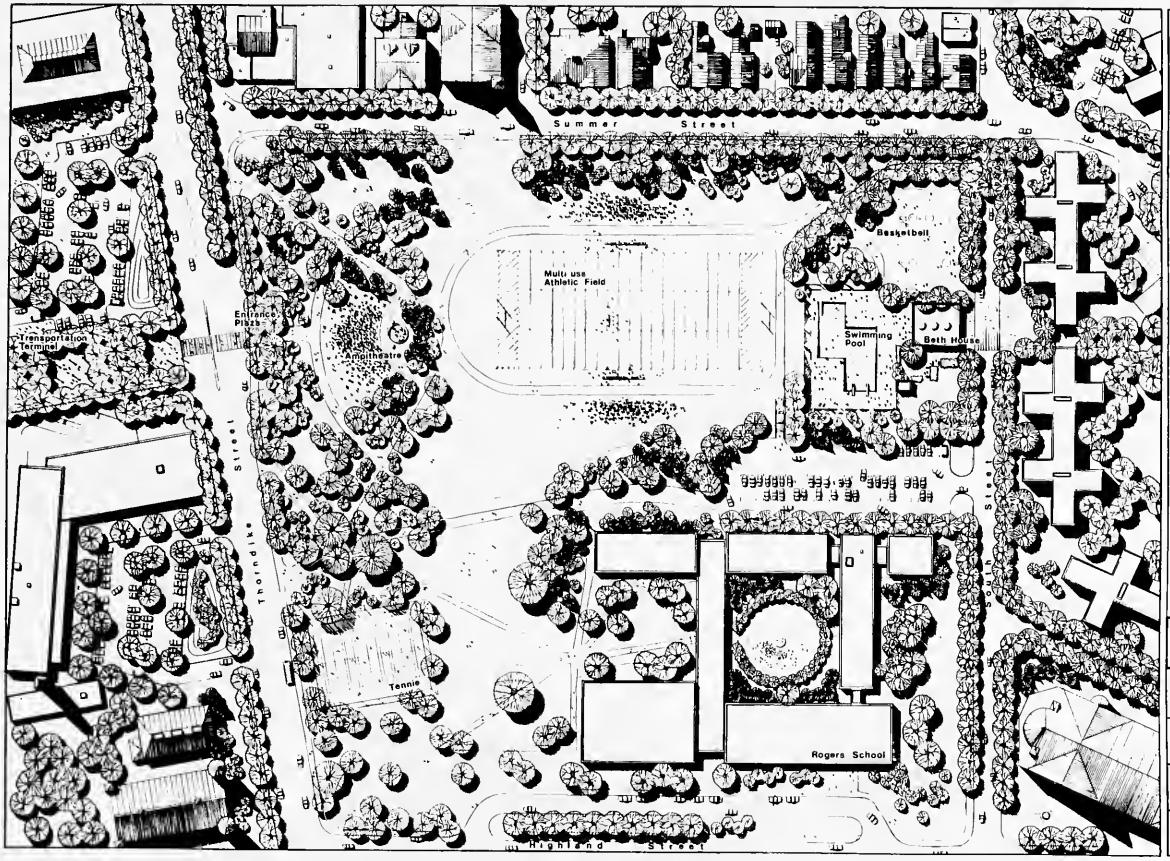
COMMUNITY DEVELOPMENT PROJECT LOWELL, MASSACHUSETTS
DIVISION OF PLANNING & DEVELOPMENT
BUREAU OF OUTDOOR RECREATION PROJECT NO. 25-00190

WILLIAM S. TAUPIER CITY MANAGER
LEO J. FARLEY MAYOR

PAUL C. K. LU & ASSOCIATES LANDSCAPE ARCHITECTS, ARCHITECTS, PLANNERS.
66 CUSHING AVENUE BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES CONSULTING ARCHITECT-ENGINEERS
267 MOODY STREET WALTHAM, MASSACHUSETTS 02154





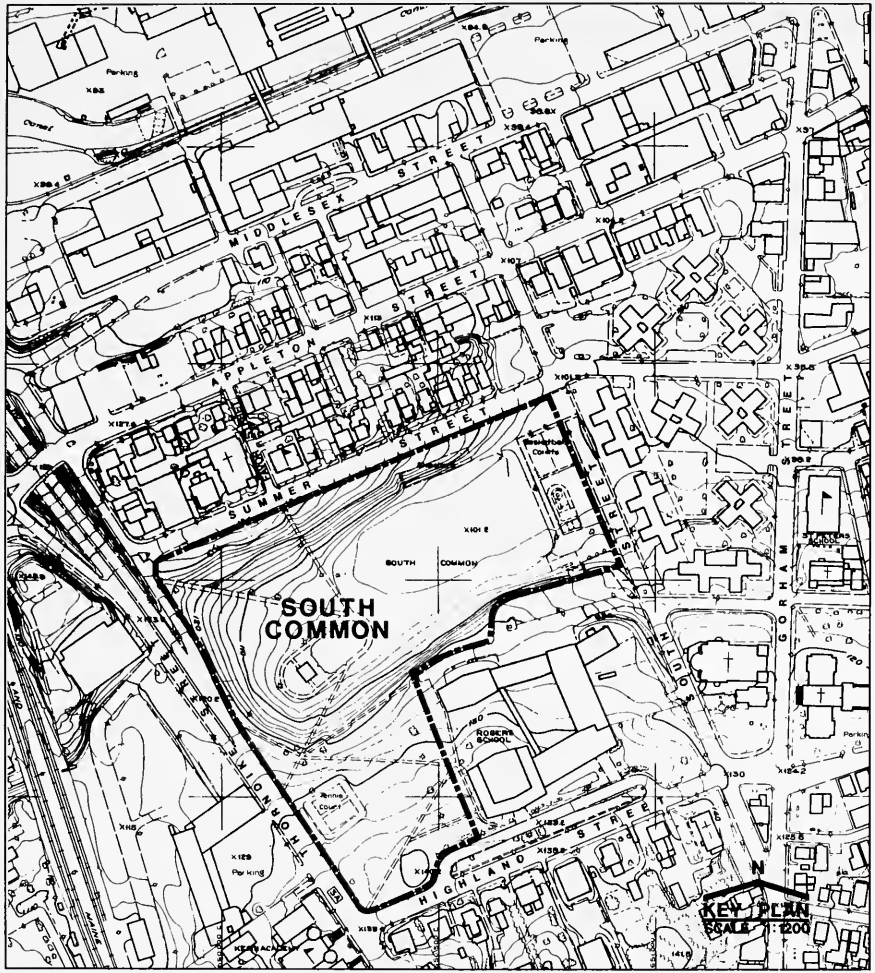
SOUTH COMMON
SWIMMING POOL

OFFICE
OF
COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

PAUL C.K. LU & ASSOCIATES
ARCHITECTS PLANNERS,
LANDSCAPE ARCHITECTS
86 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

SITE PLAN

REVISION	SCALE 1"=20'-0"
	DATE
	DRAWN
	CHECKED
	APPROVED



INDEX OF DRAWINGS

1 TITLE SHEET
2 INDEX & KEY PLAN
3 EXISTING CONDITIONS
4 DEMOLITION SITE CLEARANCE PLAN
5 LAYOUT PLAN
6 GRADING PLAN
7 GRADING SECTIONS
8 PLANTING PLAN
9 LIGHTING PLAN
10 UTILITIES PLAN
11 AMPITHEATRE PLAN & DETAILS
12 SPORTS FACILITIES & DETAILS
13 ENTRY PLAZA PLAN & DETAILS
14 SOUTH STAIRS PLAN & DETAILS
15 SITTING AREA PLAN & DETAILS
16 PAVING DETAILS
17 PLANTING DETAILS
18 LIGHTING DETAILS
19 LIGHTING DETAILS
20 UTILITIES DETAILS
21 BENCH & TRASH RECEPTACLE DETAILS

LOCATION MAP

SOUTH COMMON

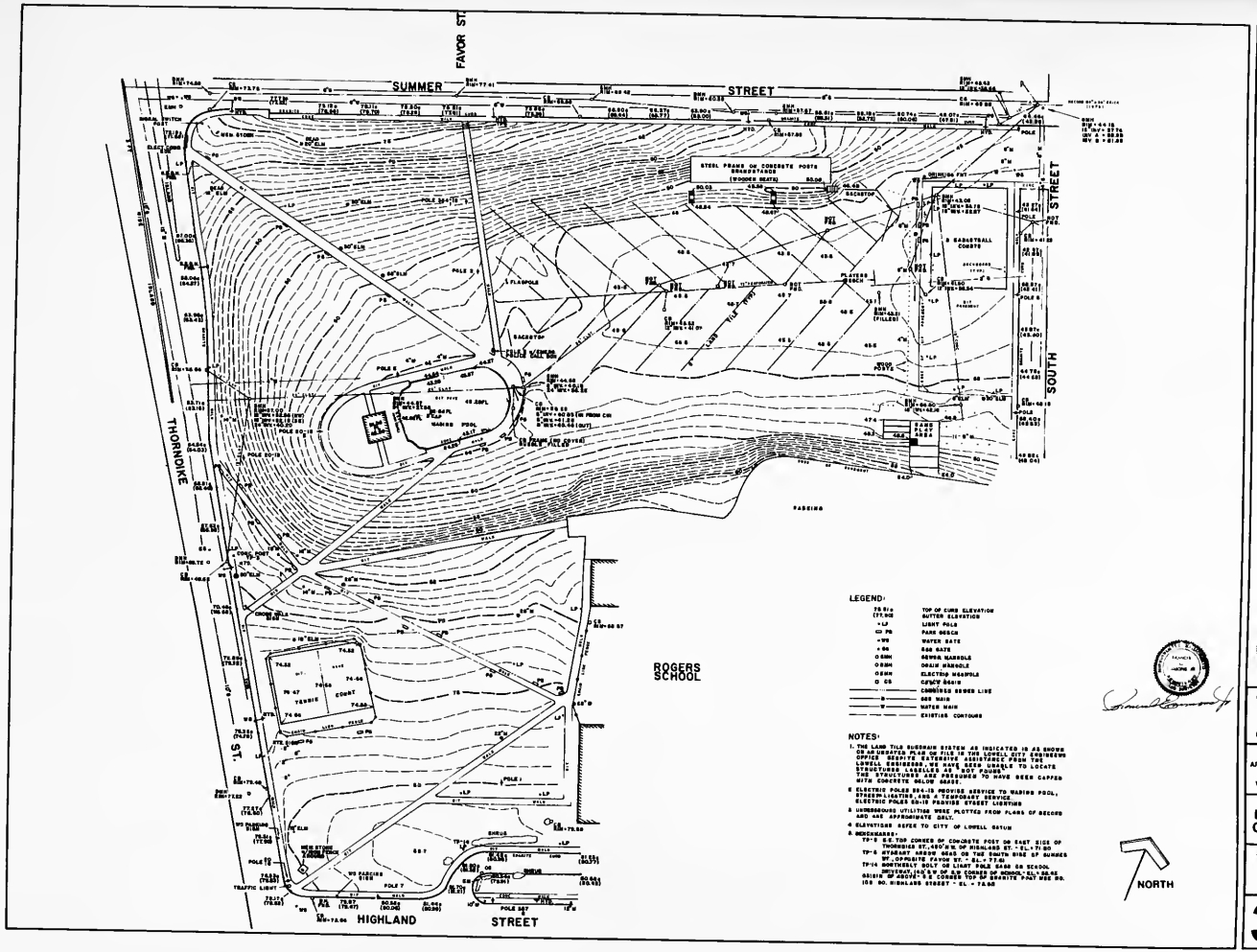
OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

PAUL C. S. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
68 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

INDEX & KEY PLAN

REVISION	SCALE DATE DRAWN CHECKED APPROVED



SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT LOWELL, MASSACHUSETTS

GENERAL NOTES

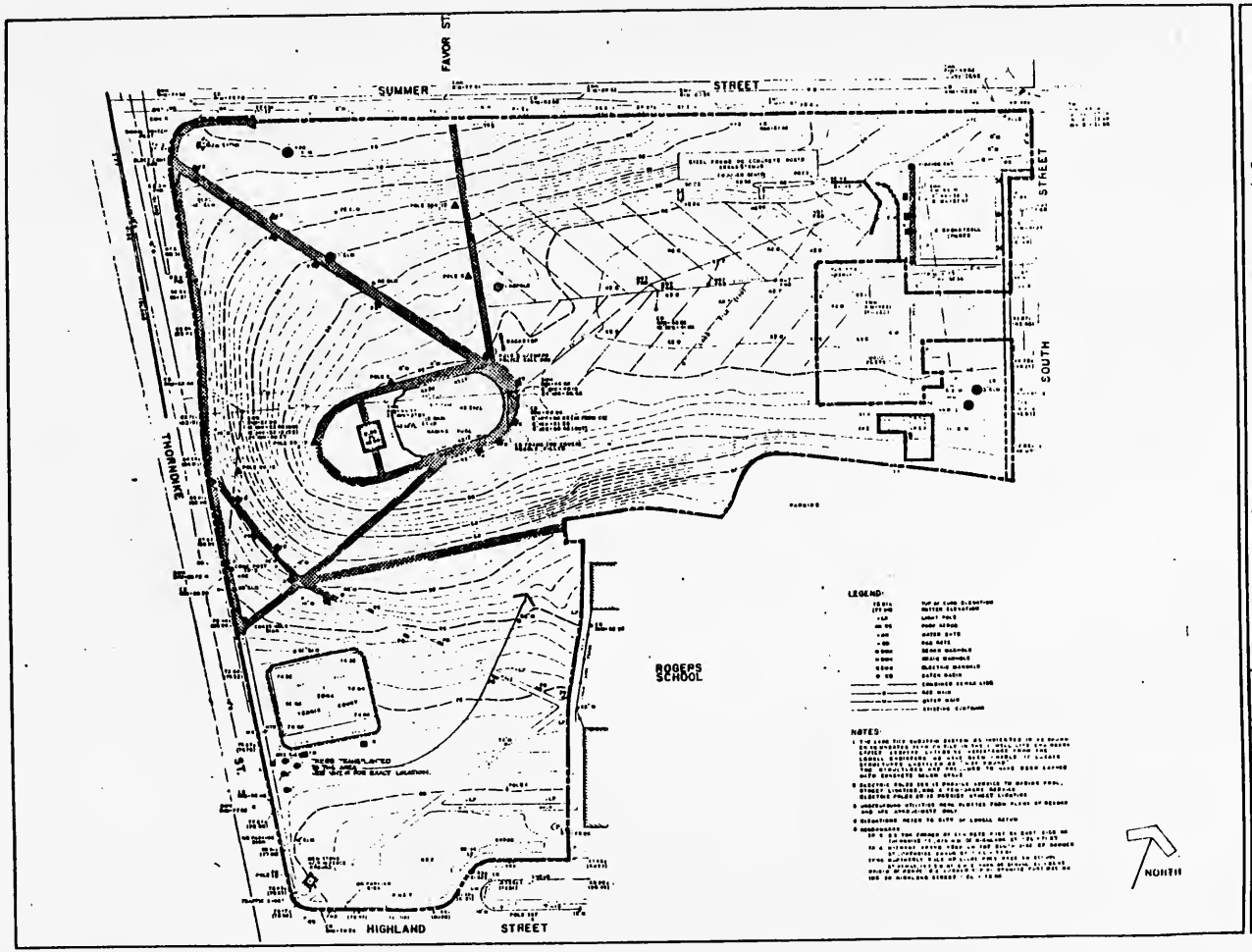
SURVEY INFORMATION TAKEN FROM PLANS PREPARED BY BARONE FUSARO & REVELLI INC. CIVIL ENGINEER & LAND SURVEYORS | SURVEY CREW SUBMITTED AND DATED OCT 1975

PAUL C. K LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
55 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
257 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

EXISTING CONDITIONS

REVISION	SCALE 1"=50'-0"
	DATE 1-30-79
	DRAWN BY
	CHECKED BY
	APPROVED BY



SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

LEGEND FOR DEMOLITION AND SITE CLEARANCE

NOTE

PAUL C. R. LIU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
66 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

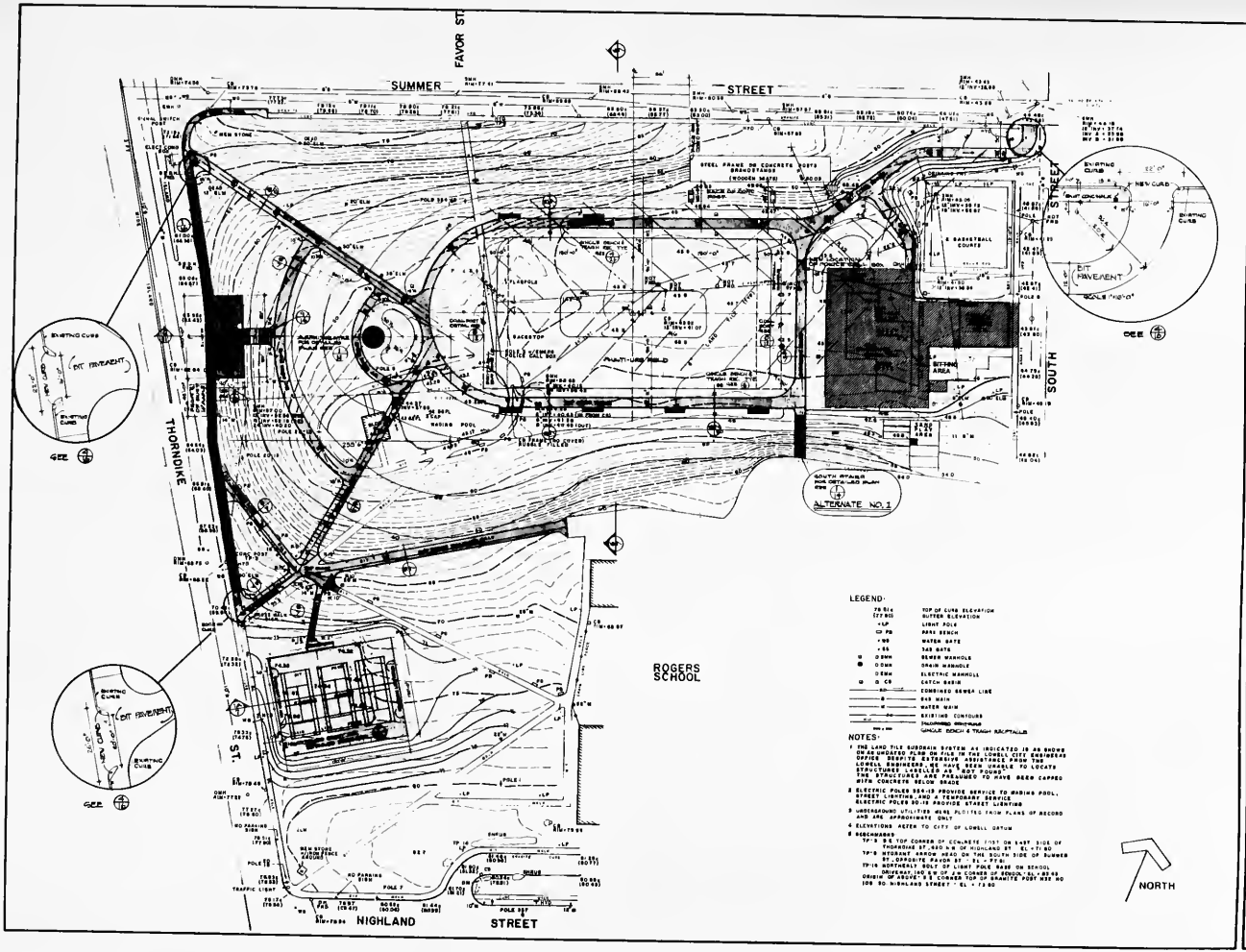
NOTES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
307 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

DEMOLITION & SITE CLEARANCE PLAN

REVISION

SCALE
DATE
DRAWN
CHECKED
APPROVED

4 of 21



SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

LEGEND FOR EXISTING MATERIALS

- CONCRETE PAVEMENT
- BITUMINOUS CONC PAVEMENT
- BRICK PAVEMENT

NOTE

1. REFER TO SHEET 2 FOR PLAN DRAWING - CONTOURS SHOWN THIS SHEET APPROXIMATE ONLY
2. FOR CONSTRUCTION PROFILE OF NORTH WALKWAY SEE SHEET 3
3. WITHIN PROJECT WALK LINE (SEE SHEET 2) ALL EXISTING CURB AT PARKING SUMMER, SOUTH & HIGHLAND STREET TO BE REMAIN EXCEPT AS NOTED.

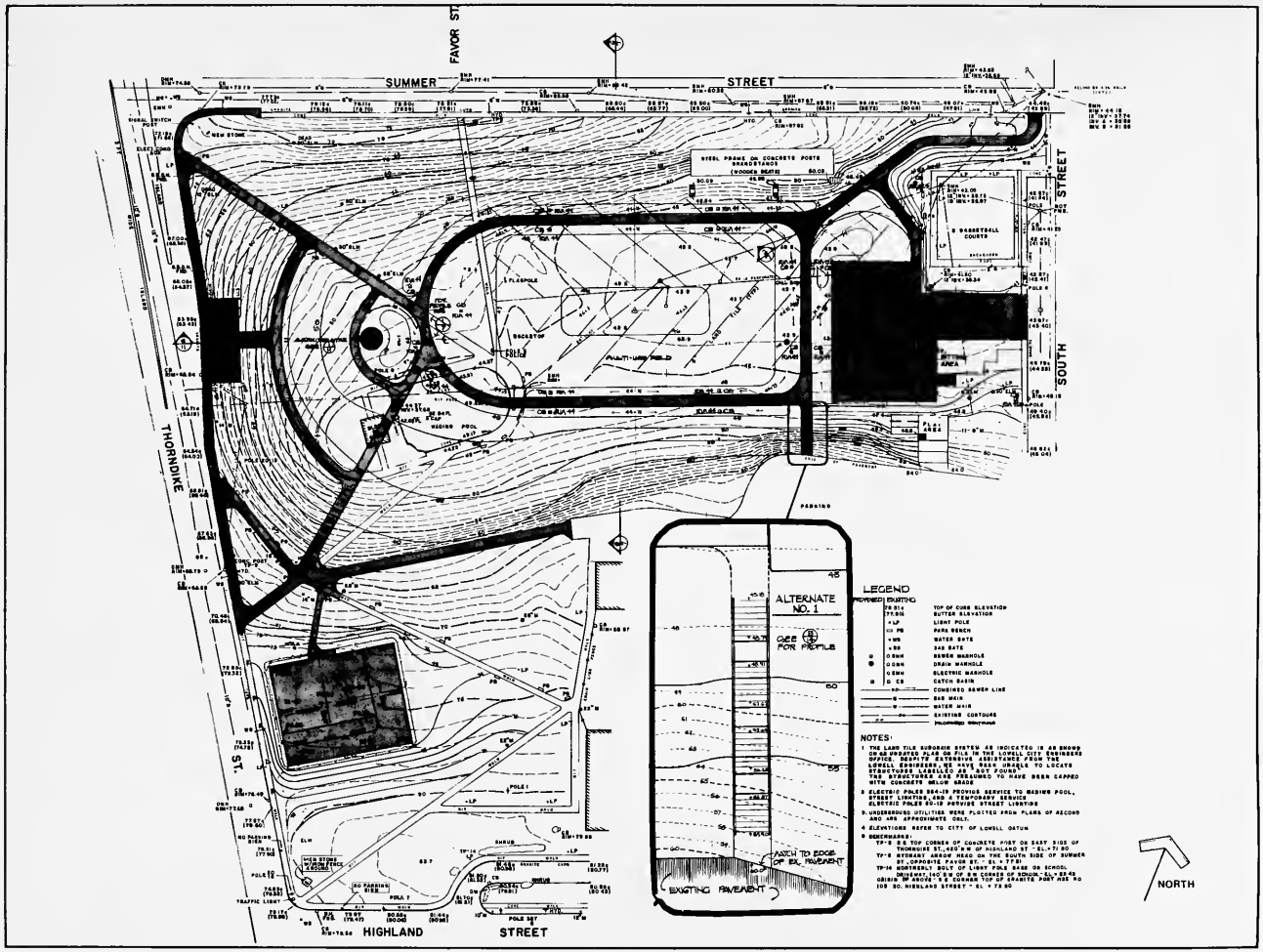
PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

REYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
367 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

LAYOUT PLAN

REVISION	SCALE 1"=30'-0"
	DATE 11-28-79
	DRAWN D.S.
	CHECKED BY
	APPROVED BY

5 of 21



SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
66 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
267 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

GRADING PLAN

REVISION	SCALE 1" = 50'-0"
	DATE 11-13-78
	DRAWN
	CHECKED
	APPROVED

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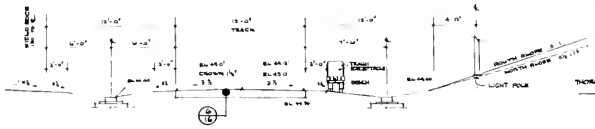
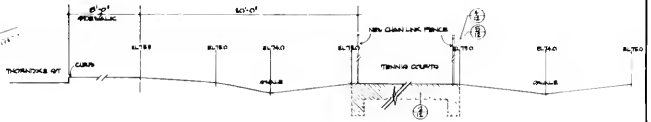
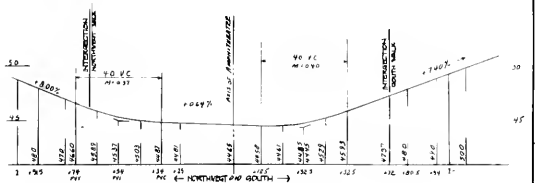


3/7 TYPICAL TRACK SECTION
THRU POINT & INLET SCALE 1/8" = 1'-0"

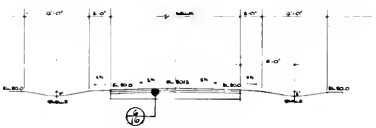


1A/7 SECTION THRU TENNIS COURT
SCALE 1/4" = 1'-0"

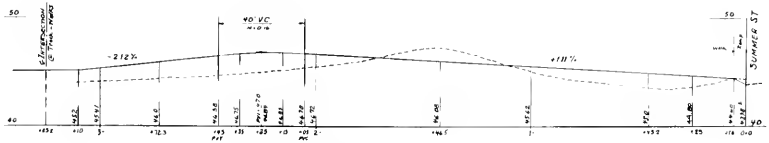
4/7 TYPICAL TRACK SECTION (EAST)
SCALE 1/4" = 1'-0"



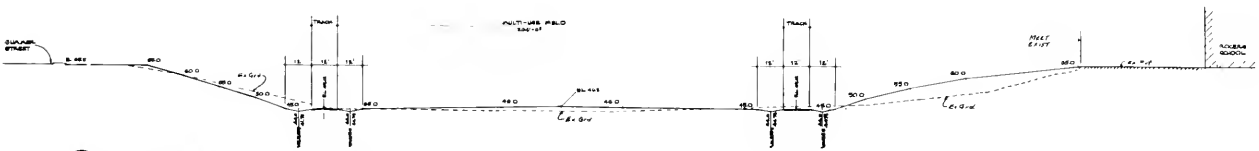
1/7 GRADING FOR WALKS & TRACK & AMPHITHEATRE
SCALE HORZ: 1" = 20' VERT: 1" = 4'



5/7 TYPICAL WALK
SCALE 1/4" = 1'-0"



2/7 PROFILE - NORTH ENTRY WALK FROM SUMMER STREET
SCALE HORZ: 1" = 20' VERT: 1" = 4'



6/7 TRANSVERSE SECTION - SUMMER STREET TO ROGERS SCHOOL
SCALE 1" = 20'-0"

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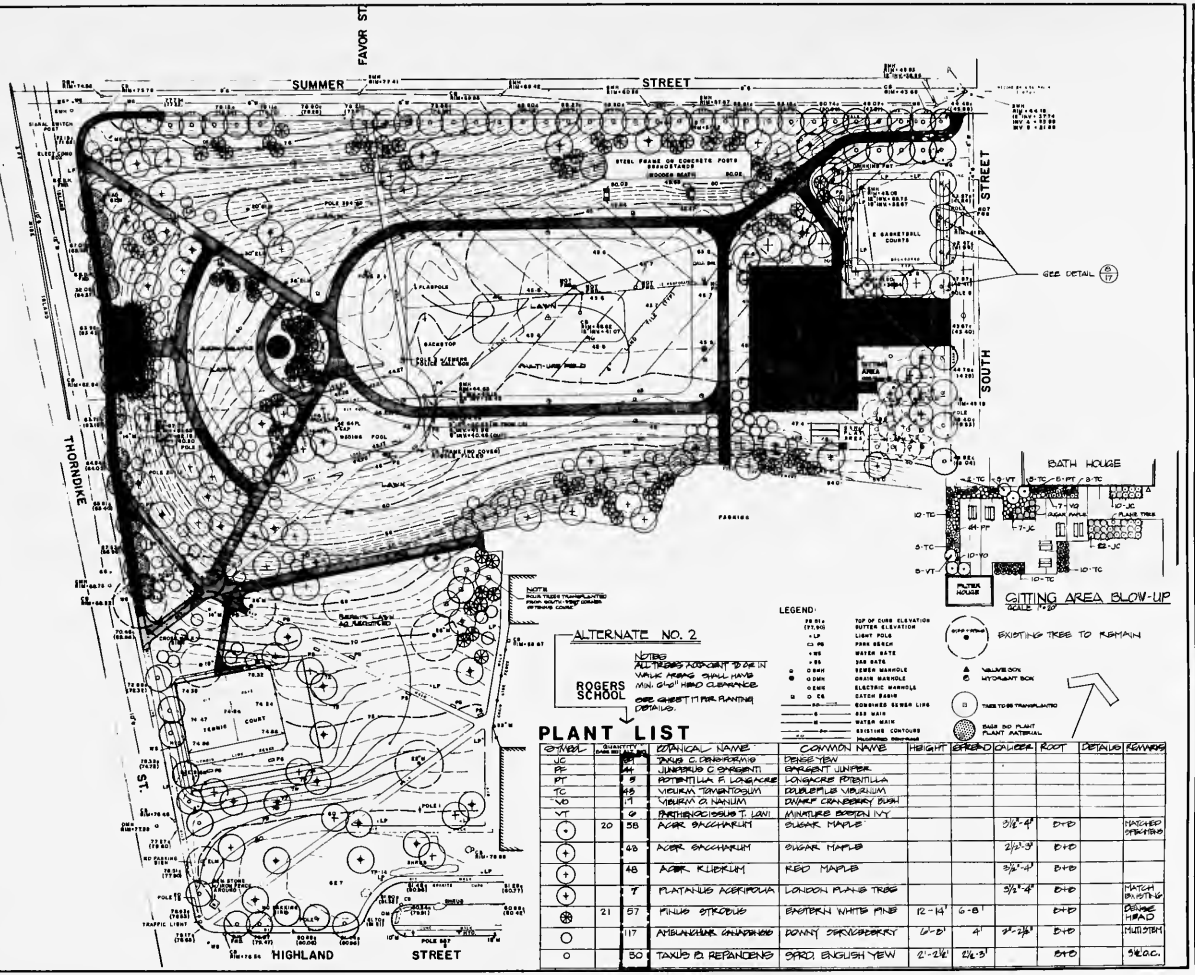
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
267 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

GRADING SECTIONS

REVISION	SCALE AS NOTED DATE 11-28-78 DRAWN O.L. CHECKED O.B. APPROVED P.L.



PLANT LIST

SYMBOL	QUANTITY BASE BID	QUANTITY ALT. NO. 2	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CALIPER	ROOT	DETAILS	REMARKS
JC		64	JUNIPERUS C. GRAFORMIS	DENSE YEW						
JE		44	JUNIPERUS C. SARGENTI	SARGENT JUNIPER						
PT		9	POTENTILLA F. LONGACRE	LONGACRE POTENTILLA						
TC		48	VIBURNUM TOMENTOSUM	DOUBLEFILE VIBURNUM						
VD		11	VIBURNUM D. NANUM	DWARF CRANBERRY BUSH						
VT		6	PARTHENOCISSUS T. LANI	MINATURE BOSTON IVY						
(+)	20	58	ACER SACCHARUM	SUGAR MAPLE			3½"-4"	B&B		MATCHED SPECIMEN
(+)		48	ACER SACCHARUM	SUGAR MAPLE			2½"-3"	B&B		
(+)		48	ACER RUBRUM	RED MAPLE			3½"-4"	B&B		
(+)		7	PLATANUS ACERIFOLIA	LONDON PLANE TREE			3½"-4"	B&B		MATCH SPECIMEN
(⊕)	21	57	PINUS STROBUS	EASTERN WHITE PINE	12-14'	6-8'		B&B		DENSE HEAD
○		117	AMBLANCHIER CANADENSIS	DOWNY SERVICEBERRY	6'-8'	4'	2"-2½"	B&B		MULTISTEM
○		50	TAXUS B. REPANDENS	SPRD. ENGLISH YEW	2'-2½'	2½-3'		B&B		3' O.C.

NOTE
ALL TREES NO. 2 SHOWN ARE IN VARIOUS AREAS SHALL HAVE MIN. 6'-0" HEAD CLEARANCE.
SEE SHEET 11 FOR PLANTING DETAILS.

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ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
68 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

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ARCHITECTS/ENGINEERS/PLANNERS
397 MOODY STREET
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PLANTING PLAN

REVISION	
	SCALE 1" = 50'-0"
	DATE 11-28-78
	DRAWN R. B.
	CHECKED D. B.
	APPROVED P. C. L.

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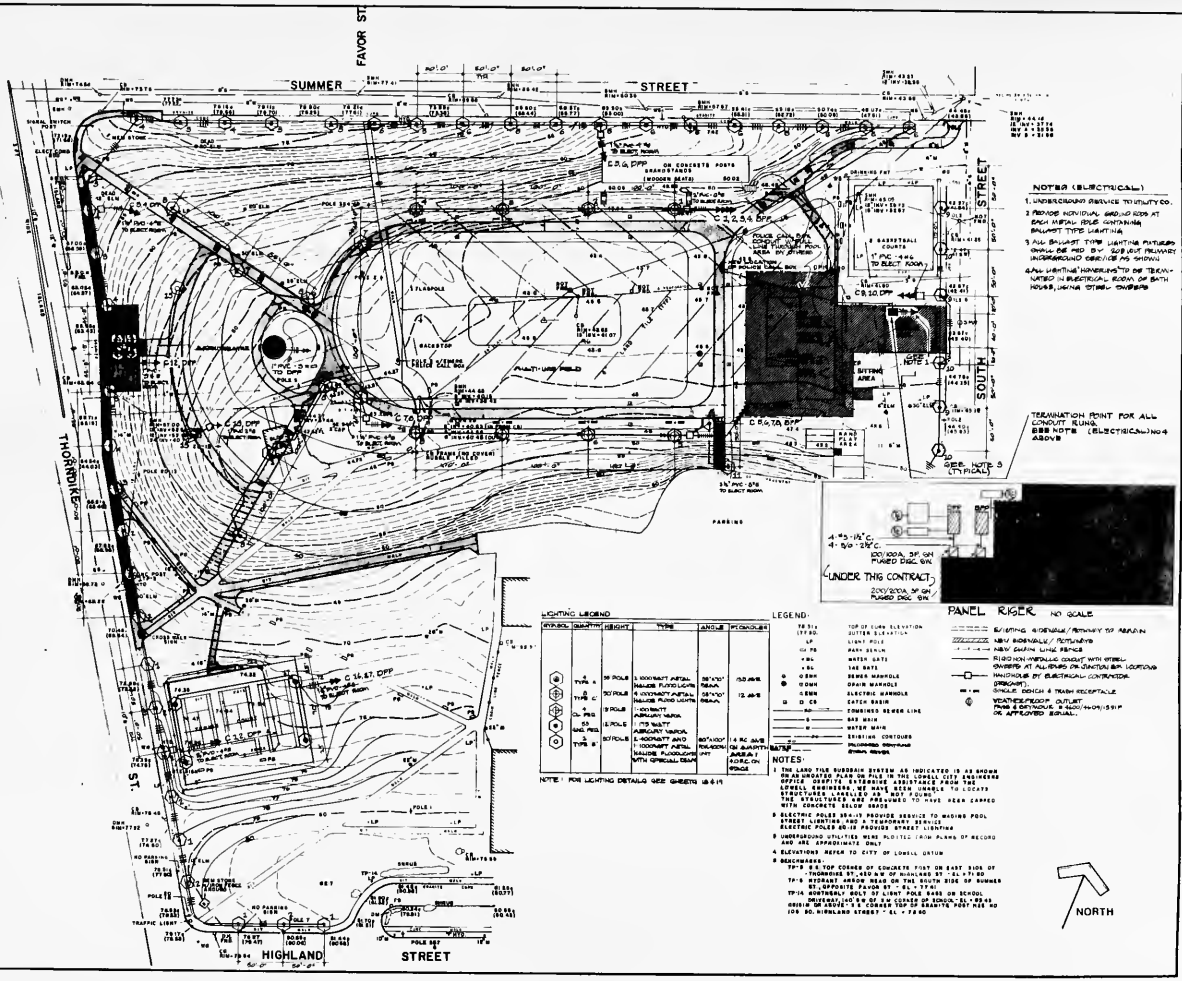

LIGHTING LEGEND

SYMBOL	QUANTITY	HEIGHT	TYPE	ANGLE	WATTAGE
	4 TYPE A	30 POLE	1-1000WATT METAL HALIDE FLOOD LIGHT	30°x70° REAR	150 AMPS
	6 TYPE C	30 POLE	4-1000WATT METAL HALIDE FLOOD LIGHT	30°x70° REAR	12 AMPS
	24 OL PKS	9 POLE	1-100WATT MERCURY VAPOR		
	55 BALL PKS	1 POLE	175 WATT MERCURY VAPOR		
	2 TYPE B	30 POLE	1-400WATT AND 1-1000WATT METAL HALIDE FLOODLIGHT WITH SPECIAL GLASS	90°x100° FOR 400W 60°	1-4 RC AMPS (IN QUARTER AREA) 1-0.R.C. ON FRONT

NOTE: FOR LIGHTING DETAILS SEE SHEETS 18 & 19

LEGEND:

TB 51.4 (TP 50)	TOP OF CURB ELEVATION (UTILITY ELEVATION)
LP	LIGHT POLE
TP	PARK BENCH
• WV	WATER GATE
• GV	GAS GATE
⊙ D SEWR	SEWER MANHOLE
⊙ D DRN	DRAIN MANHOLE
⊙ E ELEC	ELECTRIC MANHOLE
⊡ D CB	CATCH BASIN
SEWER	COMBINED SEWER LINE
GAS	GAS MAIN
WATER	WATER MAIN
50	EXISTING CONTOURS
50	PROPOSED CONTOURS (FINAL GRADE)
	EXISTING SIDEWALK/PATHWAY TO REMAIN
	NEW SIDEWALK/PATHWAYS
	NEW CHAIN LINK FENCE
	RIBBON INSTALLS COAT WITH STEEL SWEEPS AT ALL ENDS OR JUNCTION BOX LOCATIONS
	HANDHOLE BY ELECTRICAL CONTRACTOR (GRAVEL)
	SINGLE BENCH & TRASH RECEPTACLE
	WEATHERPROOF OUTLET PARK & PATHWAYS 2-600/480/277 OR APPROVED EQUAL.

NOTES:

1. THE LAND TILE SUBDRAIN SYSTEM AS INDICATED IS AS SHOWN ON AN UNDATED PLAN ON FILE IN THE LOWELL CITY ENGINEERS OFFICE. CONTRACTOR EXPERIENCE ASSISTANCE FROM THE LOWELL CITY ENGINEERS. WE HAVE BEEN UNABLE TO LOCATE STRUCTURES LABELED "TO BE REMOVED" ON PLAN. THESE STRUCTURES ARE PRESUMED TO HAVE BEEN CAPPED WITH CONCRETE BELOW GRADE
2. ELECTRIC POLES SHALL PROVIDE SERVICE TO WADING POOL STREET LIGHTING AND A TEMPORARY SERVICE ELECTRIC POLES SHALL PROVIDE STREET LIGHTING
3. UNDERGROUND UTILITIES WERE PLOTTED FROM PLANS OF RECORD AND ARE APPROXIMATE ONLY
4. ELEVATIONS REFER TO CITY OF LOWELL DATUM
5. BENCHMARKS:
   TP-3 S.E. TOP CORNER OF CONCRETE POST ON EAST SIDE OF THORNDIKE ST., 450 N.W. OF HIGHLAND ST. - EL = 71.80
   TP-5 HYDRANT ARROW REAR ON THE SOUTH SIDE OF SUMMER ST., OPPOSITE FAVOR ST. - EL = 77.41
   TP-14 NORTHERLY BOLT OF LIGHT POLE BARS ON SCHOOL ST. ABOUT 50' WEST OF THE COURT SCHOOL - EL = 80.05
   0801-8 SOUTHWEST CORNER OF CONCRETE SEAWALL POST NO 10 ON NO. HIGHLAND STREET - EL = 72.80

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88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

LIGHTING PLAN

REVISION	SCALE 1"=50'-0"
	DATE 11-28-78
	DRAWN
	CHECKED
	APPROVED

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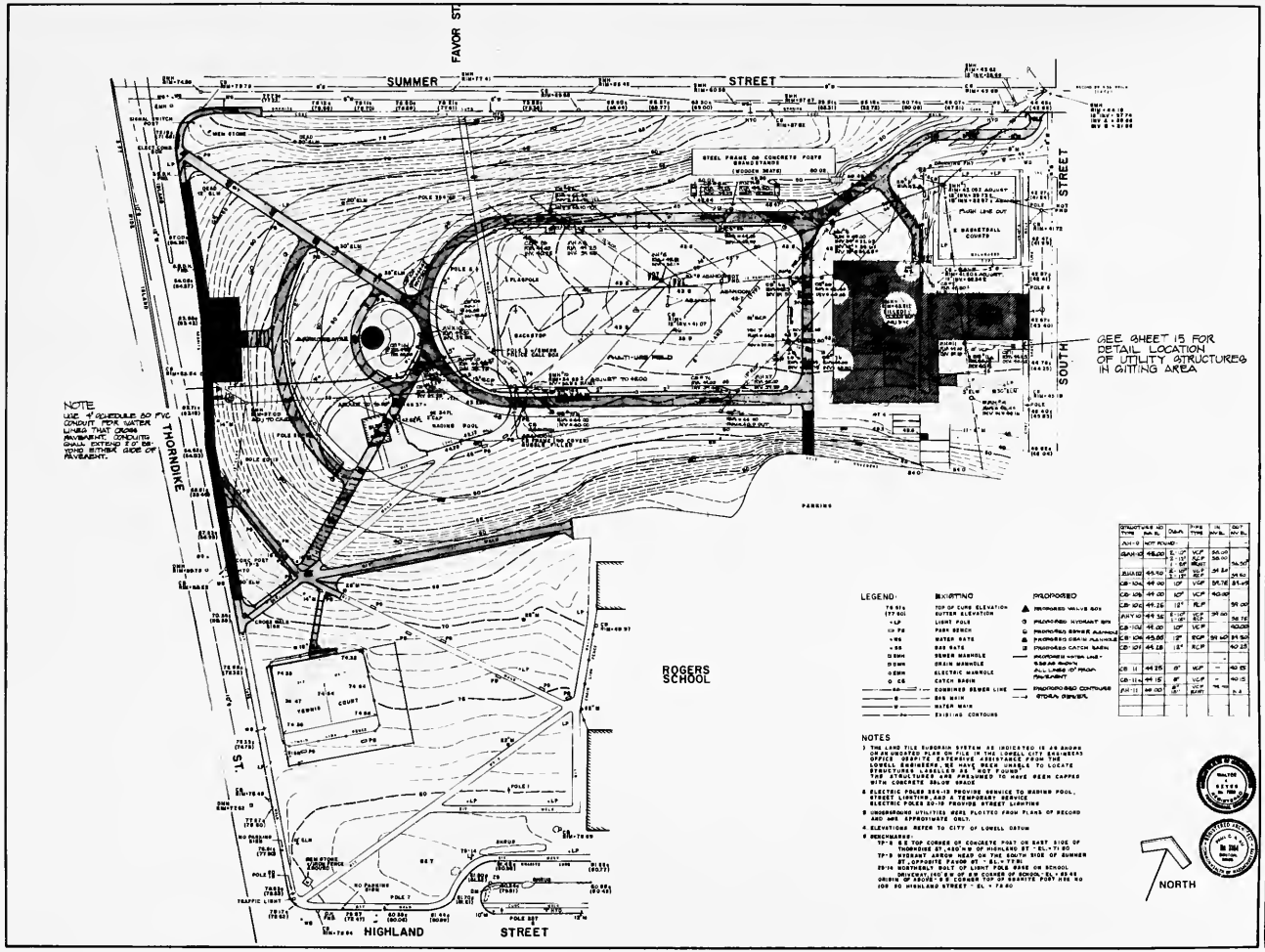

STRUCTURE NO TYPE	RIM EL	DIAM	PIPE TYPE	INV. INVEL	OUT INV EL
AH-9	NOT FOUND				
GAH-10	48.00	12" 12" 12"	VCP VCP VCP	44.00 44.00	44.00
JHA-12	45.50	6" 12" 12"	VCP VCP VCP	44.50	44.50
CB-104	44.00	10"	VCP	39.76	39.49
CB-105	44.00	10"	VCP	40.00	
CB-106	49.26	12"	RCP		39.00
AHV-10	44.36	8" 12" 12"	VCP RCP RCP	39.00	38.76
CB-108	44.00	10"	VCP		40.00
CB-109	45.00	12"	RCP	39.40	39.50
CB-107	44.28	12"	RCP		40.25
CB-11	44.25	8"	VCP		40.25
CB-114	44.15	8"	VCP		40.15
AH-11	44.00	8" 8"	VCP BURN	38.50	38.4

STRUCTURE NO TYPE	RIM EL	DIAM	PIPE TYPE	INV. INVEL	OUT INV EL
EH-11	45.01	24"	RCP	37.87	—
CB 1	49.50	10"	VCP		38.50
HYD-2	44.54		BURY	?	?
					—
CB-2	41.50	12"	RCP	[illegible]	[illegible]
HYD 3	NOT FOUND				—
					—
					—
AH-4	46.41	8"	RCP	HA	46.41
AH-3	48.00	18"	RCP	CH-21	45.24
UNKN	45.75	12"	RCP	39.98	—
CB-5a	44.88	12"	RCP	—	39.75
CB-5b	44.20	10"	VCP		40.00
AH-5	44.50	12" 12"	VCP RCP	39.90	39.50
AH-6	44.96	18" 18"	RCP RCP	39.80	39.48
		15"	RCP	39.00	—
		10"	VCP	39.85	—
CB-8a	44.95	10"	VCP		39.50
CB-9a	45.60	10"	VCP		40.35
AH-7	44.50	18"	RCP	—	39.40
		12"	RCP	39.00	—
		8" 10"	VCP VCP	39.52	—
CB-7a	44.28	10"	VCP	39.75	
CB-7b	44.20	10"	VCP	—	40.00
CB-7c	44.20	12"	RCP	—	39.48
AH-13	44.00	8" 10"	VCP VCP	39.00	39.50
CB-7d	44.00	10"	VCP		40.00
AH-8	45.95	12" 12"	RCP RCP	39.00	38.85
CB-8a	44.08	18"	RCP	—	40.10
AH-12	44.15	8" 10"	VCP VCP	39.15	—
CB-8b	44.00	10"	VCP	—	40.00

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ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
66 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

NOTES:

TEST PITS ARE TO BE MADE AT LOCATIONS OF ALL STRUCTURES MARKED NOT FOUND. STRUCTURES TO BE RETAINED SHALL BE CLEANED OUT AND THE BRICKS AND CONCRETE CRATES SHALL BE SET TO THE REGULARS BEHIND CURB. STRUCTURES TO BE ABANDONED ARE TO BE DEMOLISHED AND BACKFILLED IN ACCORDANCE WITH THE OFFICE.

PIPELINES TO BE ABANDONED ARE TO BE PLUGGED AND CAPPED WHERE SHOWN (-) BY OFFICE.

PROPOSED STRUCTURES - STORM SEWER, SANITARY OR RELOCATION OF EXISTING STRUCTURE

STRUCTURE NO TYPE	RIM EL	DIAM	PIPE TYPE	INV. INVEL	OUT INV EL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PROPOSED STRUCTURES - STORM SEWER, SANITARY OR RELOCATION OF EXISTING STRUCTURE

STRUCTURE NO TYPE	RIM EL	DIAM	PIPE TYPE	INV. INVEL	OUT INV EL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

UTILITIES PLAN

REVISION

SCALE 1" = 50'-0"
DATE 11-28-78
DRAWN
CHECKED
APPROVED

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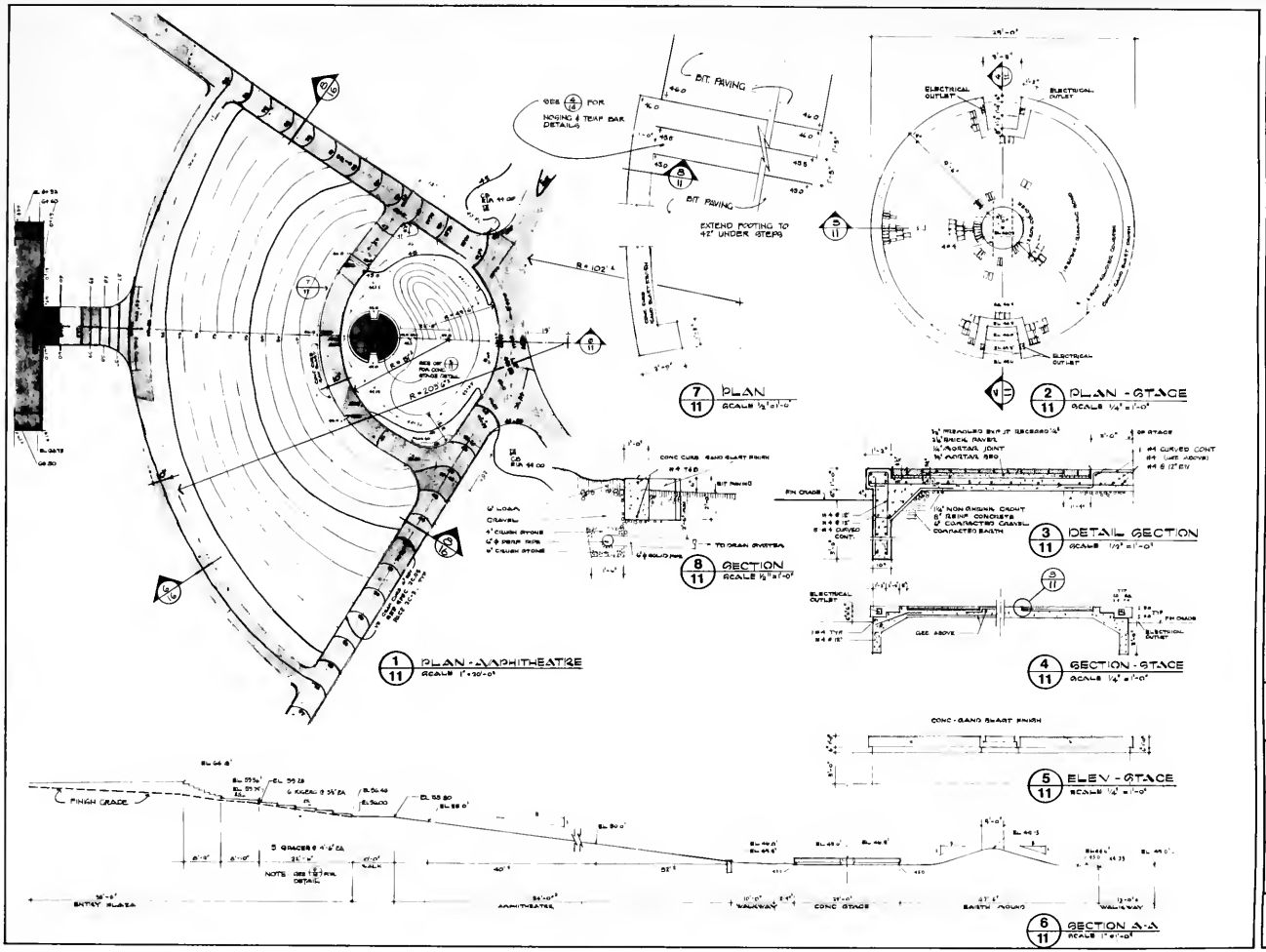

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ARCHITECTS, PLANNERS,
LANDSCAPE ARCHITECTS
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

AMPITHEATRE PLAN & DETAILS

REVISION	SCALE AS NOTED DATE 11-26-78 DRAWN PLL-DB CHECKED DB APPROVED PL

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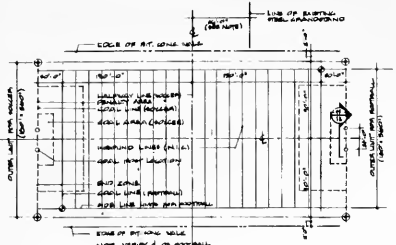
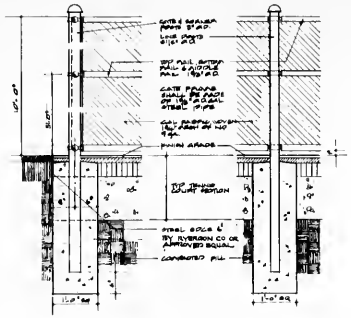
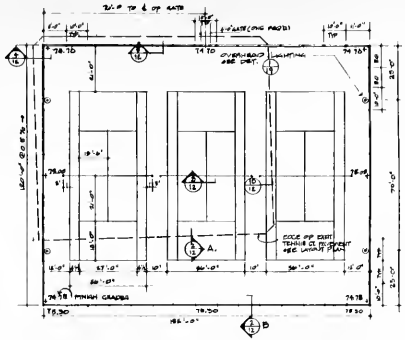


8/12 FOOTBALL AND SOCCER FIELD LAYOUT
SCALE 1" = 50'

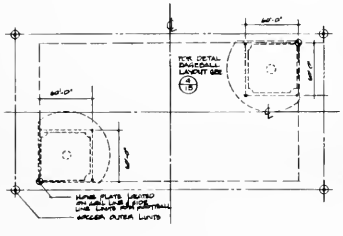


4/12 CORNER & GATE POST DET.
SCALE 1" = 1'-0"

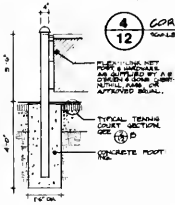
5/12 LINE POST DET.
SCALE 1" = 1'-0"



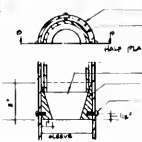
1/12 TYPICAL TENNIS COURT PAINT LINE LAYOUT
SCALE 1" = 50'



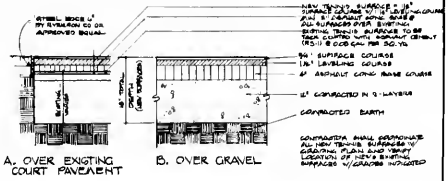
9/12 PRACTICE FIELD
SCALE 1" = 50'



10/12 TENNIS NET & POST GETTING
SCALE 1/2" = 1'-0"



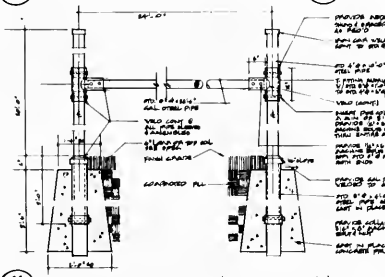
6/12 TAPERED RING DETAIL
SCALE N.T.S.



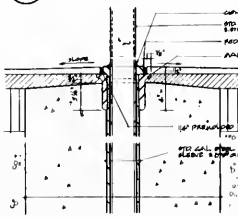
A. OVER EXISTING COURT PAVEMENT

B. OVER GRAVEL

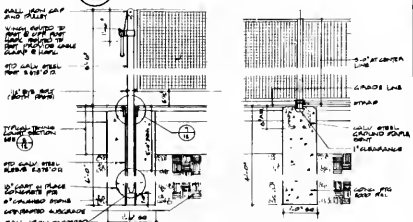
2/12 TYPICAL TENNIS COURT SECTION
SCALE 1" = 1'-0"



11/12 GOAL POST - ELEVATION & SECTION (2 REQ'D)
SCALE 3/8" = 1'-0"



7/12 POST DETAIL
SCALE 3" = 1'-0"



3/12 TENNIS NET & POST DETAIL
SCALE 3/4" = 1'-0"

SOUTH COMMON

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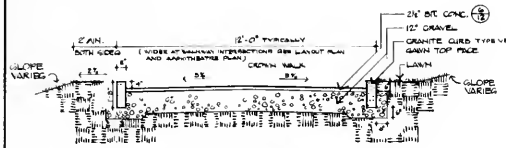
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

NEVER ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

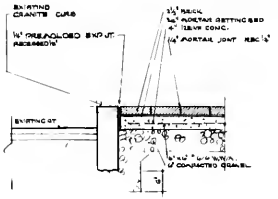
SPORTS FACILITIES AND DETAILS

REVISION	SCALE AS NOTED
	DATE 11-20-75
	DRAWN R D
	CHECKED D. Q.
	APPROVED P. L.

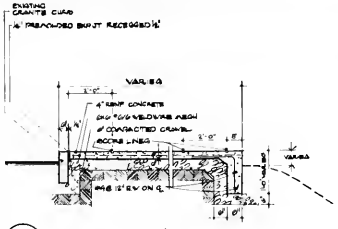
12 of 21



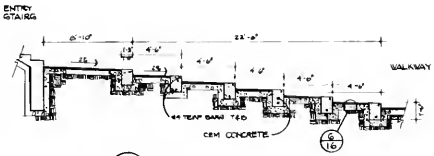
6/16 TYP. CURBED WALKWAY DETAIL
SCALE ¼"=1'-0"



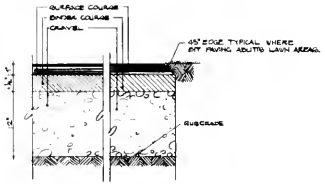
5/16 TYP. BRICK PAVER DETAIL
SCALE 1"=1'-0"



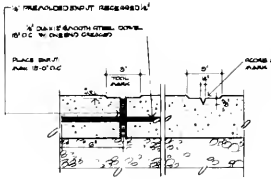
1/16 TYPICAL CONCRETE WALK
SCALE ¼"=1'-0"



9/16 DETAILS
SCALE 1/16"=1'-0"

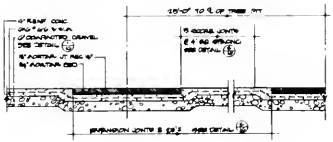


6/16 TYPICAL PAVING DETAIL
SCALE 3"=1'-0"

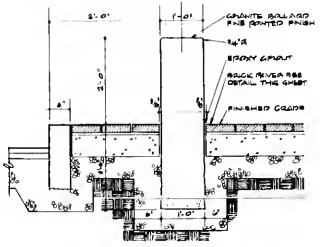


2/16 TYP. EXP. JOINT
SCALE 3"=1'-0"

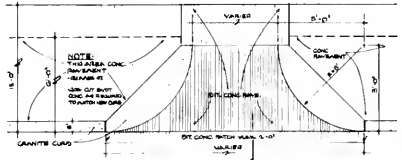
3/16 TYP. SCORE JT.
SCALE 3"=1'-0"



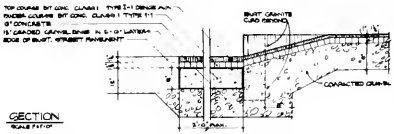
10/16 TYPICAL SIDEWALK SECTION
SCALE ¼"=1'-0"



7/16 BOLLARD DETAIL - ELEV
SCALE 1"=1'-0"

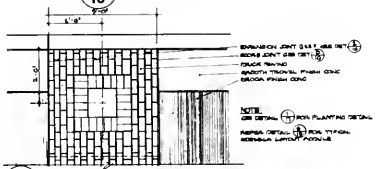


PLAN
SCALE 1"=1'-0"



SECTION
SCALE 1"=1'-0"

4/16 CURB CUT & ROAD PATCHWORK DETAIL
SCALE AS NOTED



11/16 TREE PIT PAVING DETAIL
SCALE ¼"=1'-0"

SOUTH COMMON

OFFICE OF COMMUNITY DEVELOPMENT
LOWELL, MASSACHUSETTS

PAUL C. K. LU & ASSOCIATES
ARCHITECTS, PLANNERS, LANDSCAPE ARCHITECTS.
88 CUSHING AVENUE
BELMONT, MASSACHUSETTS 02178

KEYES ASSOCIATES
ARCHITECTS/ENGINEERS/PLANNERS
287 MOODY STREET
WALTHAM, MASSACHUSETTS 02154

PAVING DETAILS

REVISION	SCALE AS NOTED DATE 11-22-79 DRAWN O.L. CHECKED O.B. APPROVED P.L.

16 of 21

SECTION V

MBE CERTIFICATION
SF 254 AND 255

STANDARD FORM (SF) **254**
Architect-Engineer and Related Services Questionnaire

1. Firm Name / Business Address:

Paul C. K. Lu and Associates
69 Trapelo Road
Belmont, Massachusetts 02178

134 Beach Street
Boston, Massachusetts 02111

1a. Submittal is for ☒ Parent Company ☐ Branch Office

2. Year Present Firm Established: 1970

3. Date Prepared: Dec. 12, 1988

4. Type of Ownership:

4a. Minority Owned ☒ yes ☐ no

5. Name of Parent Company, if any: N/A

5a. Former Firm Name(s), if any, and Year(s) Established: N/A

6. Names of not more than Two Principals to Contact: Title / Telephone

1) Paul C. K. Lu AIA, ASLA, APA 617-484-4022
2)

7. Present Offices: City / State / Telephone / No. Personnel Each Office

7a. Total Personnel 9

Paul C. K. Lu and Associates, Landscape Architects, Urban Designers, Planners
69 Trapelo Road
Belmont, Massachusetts 02178

134 Beach Street
Boston, Massachusetts 02111

Phone: 617-484-4022

8. Personnel by Discipline:

1 Administrative	___ Electrical Engineers	___ Oceanographers	___
1 Architects	___ Estimators	2 Planners: Urban/Regional	___
___ Chemical Engineers	___ Geologists	___ Sanitary Engineers	___
___ Civil Engineers	___ Hydrologists	___ Soils Engineers	___
___ Construction Inspectors	4 Interior Designers	___ Specification Writers	___
1 Draftsmen	4 Landscape Architects	___ Structural Engineers	___
___ Ecologists	___ Mechanical Engineers	___ Surveyors	___
___ Economists	___ Mining Engineers	___ Transportation Engineers	___

9. Summary of Professional Services Fees Received: (insert index number)

Last 5 Years (most recent year first)

	19___	19___	19___	19___	19___
Direct Federal contract work, including overseas					
All other domestic work					
All other foreign work*				N/A	

*Firms Interested in foreign work, but without such experience, check here: ☐.

Ranges of Professional Services Fees

INDEX
1. Less than $100,000
2. $100,000 to $250,000
3. $250,000 to $500,000
4. $500,000 to $1 million
5. $1 million to $2 million
6. $2 million to $5 million
7. $5 million to $10 million
8. $10 million or greater

Standard Form 254 July 1975
Prescribed By GSA Fed. Proc. Reg. (41 CFR) 1-16.803

Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1) 017	5	95	11)			21)		
2) 050	4	175	12)			22)		
3) 052	2	40	13)			23)		
4) 059	62	910	14)			24)		
5) 072	2	70	15)			25)		
6) 079	16	530	16)			26)		
7) 088	21	630	17)			27)		
8) 092	4	75	18)			28)		
9) 103	2	50	19)			29)		
10) 110	3	450	20)			30)		

11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
059	C	Reconstruction of Washington Street (Dudley St. to Chinatown) Boston, Mass.	Mr. Peter Calcaterra Mass Bay Transportation Authority 10 Park Plaza, Boston, MA 02116	$ 10,000	1990
059	P	Columbia River Front Park Phase I Construction Columbia, S.C.	Honorable Mayor Patton Adams City of Columbia City Hall, Columbia, S.C. 29217	1,750	1984
110	P	Lowell Historic CBD Streetscape Improvements Lowell, Mass.	Mr. Jack Travers, Director of Program Dept. of Planning & Development City Hall, Lowell, Mass.	1,600	1985
110	C	Fayetteville Transit Mall Old Fayetteville Common Fayetteville, North Carolina	Mr. John Smith, City Manager 234 Green Street Fayetteville, N.C. 28301	3,500	1985
110	P	Benco Shopping Center Planning and Design Washington, D.C.	Mr. Eduardo Baranano Office of Business and Economic Development 111 E St. N.W., Washington D.C.	Estimated 3,500	1990
110	JV	Central Business District Improvement Design & Planning Hot Springs, Arkansas	Mr. Mark Fleischner, Chairman Central Business Improvement District Assoc., Hot Springs, Arkansas 71902	1,000	1987
059	P	Logan Beautification Program Logan International Airport Boston, Mass.	Mr. Alex Seid Mass. Port Authority 10 Park Plaza, Boston, Mass.	350	1986

059	P	8 McBee St./Washington St/W. North St. Streetscape & Parking Improvement Greenville, South Carolina	Mr. Don Fogle City Chief Engineer City of Greenville Greenville, South Carolina	1,000	1988
088	P	9 LoPresti Park Redesign 6 Acre Waterfront Park Boston, Mass.	Mr. Steve Rusteika Public Facilities Department 26 Court Street, Boston, Mass. 02108	2,200	1989
059	JV	10 Walden Greenbelt 350 Acre Greenway Charlotte, N.C.	Mr. Kenneth Hoffman, P.E. Chief Engineer, Mecklenburg County, N.C. County Adm. Building, Charlotte, N.C.	1,500	1987
088	P	11 Ramsey Park Improvement Renovation For 5 Acre Urban Park Boston, Mass.	Mr. Stan Ivan Boston Parks and Recreation 934 Washington St., Boston, Mass.	500	1988
088	P	12 Spicket River Park City of Lawrence Lawrence, Mass.	Mr. Kevin Hurley Lawrence Community Development Dept. Lawrence, Mass. 01840	900	1984
017	C	13 Hyattsville Commercial Renaissance	Honorable Mayor Thomas Bass City Hall City of Hyattsville, Maryland	Master Plan	1988
088	P	14 Town Landscape Architect For Various Projects Watertown, Mass.	Mr. Mark Boyle Director of Planning Town Hall, Watertown, Mass.	On-Going	Annual Basis
092	P	15 Columbia Riverfront Master Plan (350 Acres ±) Columbia, S.C.	Honorable Mayor Patton Adams City of Columbia City Hall, Columbia, S.C. 29217	N/A	1984
059	C	16 MBTA Park,Ride & Station Improvement Programs Boston, Mass.	Mr. Charles B. Steward Assist. Director of Construction Mass. Bay Transportation Authority Ten Park Plaza, Boston, MA 02116	6,000	Estimated 1991
059	JV	17 Market Square Urban Design and Improvement Raleigh, N.C.	Mr. Wayne Backer Project Coordinator City of Raleigh, City Hall, Raleigh, N.C.	2,300	1986
079	C	18 LaSalle University Library Site Planning & Landscape Architecture Philadelphia, PA	Mr. Jeffrey Freeman (Principal) Shepley Bulfinch Richardson Abbott 40 Broad Street Boston, Mass.	900	1988
059	P	19 Various Tree Planting Projects Throughout City of Boston (Phase I) Boston, Mass.	Linda Cook, Project Manager Boston Public Facilities Department 15 Court Street, Boston, Mass.	500	1986

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Prescribed By GSA Fed. Proc. Reg. (41 CFR) 1-16.803

047	P	20 Facade and Signage Improvement Augusta, Maine	Ms. Mary Letourneau, Director Community Development Dept. City Hall, Augusta, Maine 04330	N/A (Report)	1984
110	C	21 Broad Square Park Downtown C.B.C. Statesville, N.C.	Chairman Downtown Merchants Association Statesville, N.C.	N/A Conceptual Design	Schematic
110	C	22 Railroad Square Improvements Pepperell, Mass.	Mr. Robert Halpin, Executive Secretary Board of Selectmen Town Hall, Pepperell, MA 01463	500±	On Going
059	P	23 Historic Market Square Planning and Design Fayetteville, N.C.	Mr. John Smith, City Manager Office of City Manager Fayetteville, N.C. 28301	1,000	1988
079	C	24 University of Mass (Boston) Comprehensive Facilities Plan Boston, Mass.	Mr. Anthony Blacketh Div. of Capitol Planning and Operations One Ashburton Place, Boston, MA 02109	Master Plan	1988
059	C	25 Cape Cod Rail Trail Extension Eastham, Wellfleet, Mass.	Mr. Daniel O'Brien, Project Manager Department of Environmental Management 225 Friend Street, Boston, Mass. 02114	1,000	1987
059	P	26 Lynn Heritage State Park Visitors Center Site Improvements Lynn, Mass.	Mr. James Baecker Dept. of Environmental Management (DEM) 225 Friend Street, Boston, MA 02114	500	Estimated
050	C	27 West Broadway Housing Renewal Project West Broadway, South Boston	Mr. Michael Jacobs Boston Housing Authority Chauncey Street, Boston, Mass.	2,750	1987
110	P	28 Fayetteville Downtown Linkage Fayetteville, N.C.	Ms. Susan Cheek, Assistant City Manager City Hall Fayetteville, N.C. 28301	1,500	1990
039	C	29 Greenville Central Transit Transfer Facilities Greenville, South Carolina	Mr. Dan Boozer, Director Greenville Transit Authorities Greenville, South Carolina	3,500	1989
110	P	30 Winchester Downtown Urban Design/ Pedestrian Systems Winchester, Mass.	Mr. John Ciarcia Town Engineer Town Hall, Winchester, Mass. 01890	1,500	1985

12. The foregoing is a statement of facts

Signature: _____ **Typed Name and Title:** Paul C. K. Lu ASLA, AIA APA Principal

Date: Dec. 12, 1988

☆U.S.GPO:1979-0-281-187/4385

Standard Form 254 July 1975
Prescribed By GSA Fed. Proc. Reg. (41 CFR) 1-16.802

STANDARD FORM (SF) **255**

Architect-Engineer Related Services for Specific Project

1. Project Name / Location for which Firm is Filing:

South End Renewal Area, Hayes Park
Warren Avenue and West Canton Street
Boston, Ma

2a. *Commerce Business Daily* Announcement Date, if any:

NA

2b. Agency Identification Number, if any:

NA

3. Firm (or Joint-Venture) Name & Address

Paul C.K. Lu and Associates
69 Trapelo Road
Belmont, Ma 02178

134 Beach Street
Boston, Ma 02111

3a. Name, Title & Telephone Number of Principal to Contact

Paul C. K. Lu, AIA, ASLA
617 484-4022

3b. Address of office to perform work, if different from Item 3

4. Personnel by Discipline: (List each person only once, by primary function.)

1 Administrative	___ Electrical Engineers	___ Oceanographers	___
1 Architects	___ Estimators	2 Planners: Urban/Regional	___
___ Chemical Engineers	___ Geologists	___ Sanitary Engineers	___
___ Civil Engineers	___ Hydrologists	___ Soils Engineers	___
___ Construction Inspectors	___ Interior Designers	___ Specification Writers	___
1 Draftsmen	4 Landscape Architects	___ Structural Engineers	___
___ Ecologists	___ Mechanical Engineers	___ Surveyors	___
___ Economists	___ Mining Engineers	___ Transportation Engineers	9 Total Personnel

5. If submittal is by JOINT-VENTURE list participating firms and outline specific areas of responsibility (including administrative, technical and financial) for each firm: (Attach SF 254 for each if not on file with Procuring Office.)

N/A

5a. Has this Joint-Venture previously worked together? ☐ yes ☐ no

6. If respondent is not a joint-venture, list outside key Consultants/Associates anticipated for this project (Attach SF 254 for Consultants/Associates listed, if not already on file with the Contracting Office).

Name & Address	Specialty	Worked with Prime before (Yes or No)
Haley & Aldrich, Inc. 58 Charles Street Cambridge, Ma 02141	Geotechnical Engineering	No
Seelye, Stevenson, Value & Knecht 230 Congress Street Boston, Ma 02110	Consulting Engineers	Yes
Bryant Associates, Inc. 648 Beacon Street P.O. Box 38 Boston, Ma 02115-0038	Survey Consultants	Yes

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.

a. Name & Title: Paul C. K. Lu, AIA, ASLA Principal	a. Name & Title: Christian Brown Associate
b. Project Assignment: Project Designer	b. Project Assignment: Project Manager
c. Name of Firm with which associated: Paul C. K. Lu and Associates	c. Name of Firm with which associated: Paul C. K. Lu and Associates
d. Years experience: With This Firm 18 With Other Firms 15	d. Years experience: With This Firm 4 With Other Firms 5
e. Education: Degree(s) / Year / Specialization Harvard Univ. M.L.A./1967/Landscape Arch & Planning Kansas St. Univ. M.Arch./1962 & B.Arch./1958-Arch. & Design Chung-King Univ. M.S. in Architectural Engineering/1954	e. Education: Degree(s) / Years / Specialization Univ. of Mass. B.S./Environmental Design/1978
f. Active Registration: Year First Registered/Discipline Architecture - 1970 NCARB - 1975 Landscape Architecture - 1968 CLARB - 1976	f. Active Registration: Year First Registered/Discipline
g. Other Experience and Qualifications relevant to the proposed project: Broad experience in the areas of master planning, architectural design and landscape design for major community and recreational development projects, major campus planning projects, com'l industrial and institutional projects. Principal-in-Charge of memorial swimming pool, bath house and 16-acre urban park in Lowell, MA: Itek Corp, master plan and headquarters in Lexington, MA; master plan for Digital Equipment Corp. laboratory complex in Hudson, MA; master plan for LaRomana Industrial Free Zone, Dominican Republic. Project Director and Manager, Planning & Design Coordinator for the Hammocks, a 1100-acre new community, and Kendale Gable a 640-acre new community, both in Dade County, FL: McLean Gardens, a PUD office, retail & housing complex in Washington, DC; Wayne State Univ. master plan in Detroit, MI: Tulane Univ. master plan, New Orelans, LA; Mayo Clinic master plan, Rochester, MN; Wilmington Medical Ctr, Wilmington, DL Beltsville Agricultural Research Center, Beltsville, MD. Mr. Lu is a receipient of international & national design awards.	g. Other Experience and Qualifications relevant to the proposed project: Served as project manager on a vast array of open space projects since joining the firm. Relevant experience includes: design of passive and active open space in downtowns/CBDs, streetscape revitalization, urban design, master planning, public housing, and transportation planning. Specific projects include: Winchester Center Urban Design; Fitchburg Hi-Tech Center; Moore Square Area Improvements, Raleigh, NC; West Broadway Public Housing Renewal Project, Boston, MA; Concord Playfields Improvement Program; Spicket River Park, Lawrence, MA; Natick Common and Upper Common Rehabilitation, Fitchburg, MA.

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.

a. Name & Title: Kit Har Ivy Ng Architect	a. Name & Title: Carolyn Cooney - Registered Landscape Architect
b. Project Assignment: Production Chief	b. Project Assignment: Landscape architect/construction documentation
c. Name of Firm with which associated: Paul C. K. Lu and Associates	c. Name of Firm with which associated: Paul C. K. Lu and Associates
d. Years experience: With This Firm 1 With Other Firms 1	d. Years experience: With This Firm 5 With Other Firms 10
e. Education: Degree(s) / Year / Specialization Univ. of New South Wales B.Architecture/1987, Honors	e. Education: Degree(s) / Years / Specialization Univ. of Penn., M.L.A. Landscape Architect, 1977 Cornell Univ., B.A. Philosophy 1967 U.C. at Santa Cruz, B.A. with honors 1981
f. Active Registration: Year First Registered/Discipline	f. Active Registration: Year First Registered/Discipline Reg. Landscape Architect Mass. No. 729
g. Other Experience and Qualifications relevant to the proposed project: Worked on a variety of urban design and open space projects in the U.S., Asia, and Australia. Project experience includes: Lynn State Park Site Design, Lynn, MA; Ramsey Park Design and Construction, Boston, MA; Belmont Shopping Center Parking Design, Belmont, MA; Nut Island Site Improvements, Quincy, MA; Whitsunday Holiday Resort, Queensland, Australia; Parramatta Office Complex, Parramatta, New South Wales; Melaka Sports Center, Malaysia; and Supreme Office Complex, Melaka, Malaysia.	g. Other Experience and Qualifications relevant to the proposed project: Broad experience in the areas of master planning and landscape architecture with particular professional specialization in park design and rehabilitation. Worcester Common, Worcester, MA., Natick Common Rehabilitation, Natick, MA. Other experience includes design for and project manager for Four Season Hotel/Park Plaza Redevelopment, Boston, MA., La Chaminade Conference Center, Santa Cruz, California.

7. Brief resume of key persons, specialists, and individual consultants anticipated for this project.

a. Name & Title: Roberto C. Garcia	a. Name & Title: Elizabeth Baron
b. Project Assignment: Project Landscape Architect	b. Project Assignment: Project Staff
c. Name of Firm with which associated: Paul C. K. Lu and Associates	c. Name of Firm with which associated: Paul C. K. Lu and Associates
d. Years experience: With This Firm 1 With Other Firms ___	d. Years experience: With This Firm 1 With Other Firms 1
e. Education: Degree(s) / Year / Specialization Texas A & M Univ. B.S,/1984 Landscape Architecture	e. Education: Degree(s) / Years / Specialization Univ. of Michigan M.U.P./1981 Urban Planning Ohio Wesleyan Univ. B.A./1979 Politics & English With Honors
f. Active Registration: Year First Registered/Discipline	f. Active Registration: Year First Registered/Discipline
g. Other Experience and Qualifications relevant to the proposed project: Mr. Garcia was the Project Planner or Team Leader for the following projects which required pedestrian and/or park improvements: Central Transit Transfer Facility, Greenville, SC; McBee and Washington Street landscape improvements, Greenville, SC; University of Massachusetts Comprehensive Facilities Plan, Boston, MA; Fort Buss Installation Design Guide, West Texas; and Trinity Lakes Park Master Plan, Dallas, TX.	g. Other Experience and Qualifications relevant to the proposed project: Planning background includes: Environmental review preparation for Federal Housing Projects; Small Cities Pilot Program, Dayton, Ky.; Downtown Business Analysis, Ann Arbor, MI.; Transportation Analysis, Ann Arbor, MI.; Natural Disaster Needs Assessment, Cardington, OH. Improvement, Restoration and/or Analysis of Pedestrian and Recreational Facilities.

8. Work by firm or joint-venture members [illegible]

a. Project Name & Location	b. Nature of Firm's Responsibility	c. Project Owner's Name & Address	d. Completion Date (actual or estimated)	e. Estimated Cost (in thousands)	
				Entire Project	Work for which Firm was/is responsible
(1) LoPresti Park Boston, MA	Phase I & II of redesign of existing waterfront park on Boston Harbor	Steve Rusteika Boston Public Fac. Dept. Boston, MA	1989	2,300	100%
(2) Lynn Heritage State Park Visitor's Center Lynn, MA	Visitor's Center Site Design; Planting, Paving, Fountain Design	James Baecker, Proj. Mgr. Comm. of Mass., Ex. Off. of Env. Affairs, 100 Cambridge St Boston, MA	1989	500	100%
(3) Ramsey Park Boston, MA	Site design & renovation of active recreational park	Lori Silverman, Proj. Mgr. Boston Park & Rec. Dept. 294 Wash. St., Boston, MA	1989	480	100%
(4) Market St. Plaza Lowell, MA	Site design for parking facility; paving, planting, fencing, and seating.	Jack Tavares, Dir. of Programming, Dept. of Comm. & Dev. JFK Bldg., Lowell, MA	1988	173	100%
(5) Columbia Riverfront Park Columbia, SC	Master planning, landscape arch and engineering for historic park.	Mayor Kirkman Finley, Jr. City Hall, 1737 Main Street Columbia, SC	1981	1,750	100%
(6) Historic Central Business District Improvements Lowell, Massachusetts	Overall consultant for landscape improvements for historic downtown streetscape.	Mr. Robert Gilman Assistant City Manager City of Lowell Lowell, Massachusetts	1981	750	100%
(7) South Common Urban Park Lowell, Massachusetts	Landscape arch and engineering for 12 acre urban park.	Mr. Robert Gilman Assistant City Manager City of Lowell Lowell, Massachusetts	1978	1,200	100%
(8) Western Canal Park Lowell, Massachusetts	Landscape arch and engineering, and urban design for 4 block canal.	Mr. John Taveres Model Cities Agency J.F.K. Civic Center Lowell, Massachusetts	1975	529	100%
(9) Ecumenical Plaza Lowell, Massachusetts	Planning, arch and landscape arch for an urban plaza.	Mr. John Taveres Model Cities Agency J.F.K. Civic Center Lowell, Massachusetts	1974	400	100%
(10) Broad Square Park Statesville, NC	Urban design and landscape arch. for downtown CBD, Statesville, NC	Statesville Merchants Association Statesville, NC	N/A	500	80%

10. Use this space to provide any additional information or description of resources (including any computer design capabilities) supporting your firm's qualifications for the proposed project.

See Attached Materials For Additional Information

11. The foregoing is a statement of facts.

Signature: _____ Typed Name and Title: Paul C. K. Lu, Principal

Date: Dec. 12, 1988

GSA DC 75-10944

STANDARD FORM 255 (Rev. 10-83)

SECTION VI

CLIENT REFERENCES

CLIENT REFERENCES

City of Boston, MA.

Mr. Stephen Rusteika
Senior Project Manager
Public Facilities Department
26 Court Street
Boston, MA 02108

Tel: (617) 725-4931

City of Boston, MA.

Ms. Lori Silverman
Project Manager Park & Recreation Dept.
294 Washington St.
Suite 930
Boston, MA.

Tel: (617) 542-3071

City of Concord, MA.

Mr. Danner DeStephano
Recreation Director
Concord Recreation Department
Harvey Wheeler Community Center
1276 Main Street
Concord, MA. 01742

Tel: (617) 369-6460

City of Lowell, MA.

Mr. John Tavares
Program Development Director
Division of Planning and Development
John F. Kennedy Civic Center
Lowell, MA. 01852

Tel: (617) 454-8821